Death of Phil M. Riley

With sincere regret we announce the death of Phil M. Riley that occurred on February 21, 1926. Mr. Riley was for ten years a valued member of the editorial staff of *The India Rubber World*, and our Boston correspondent. His obituary will be published in our forthcoming issue.

INDIA RUBBER WORLD
FOUNDED 1889
CAOUTCHOUC
GUTTA-PERCHA
Reg. U.S. Pat. Off.
Reg. United Kingdom.

Published on the 1st of each month by

THE INDIA RUBBER PUBLISHING CO.

No. 25 West 45th Street, New York

Telephone—Bryant 2576

CABLE ADDRESS: IRWORLD, NEW YORK

Member of the National Publishers' Association

HENRY C. PEARSON, F.R.G.S., Editor

Vol. 73 March 1, 1926 No. 6

SUBSCRIPTION: $3.00 per year, $1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, $3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made on application.

REMITTANCES: Should always be made by bank draft, Post Office or Express Money Order on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

IMPORTANT! The POSTAL DEPARTMENT is having infinite trouble because of careless addressing of letters. Please help them, us, and yourselves by addressing fully and legibly.

TO ADVERTISERS. Please put your street address in all advertisements. The Post Office Department especially requests this.

Paying War Debts with Rubber

By way of making it easier for some nations abroad to pay their huge war debt to the United States, and at the same time to assure American manufacturers of an ample, constant, and moderate-priced supply of foreign raw material, the suggestion is made that a considerable part of such debt be translated into a financial control of major sources of supply of such basic material. The proposition is certainly fascinating, and on its face appears fair and rational, although many will surely contest its feasibility.

History shows that nations have always been more willing to make compacts involving mutual political concessions than to make liberal agreements to promote one another's material prosperity. It would be curious to note how they would react to a reciprocity proposition that would go still further, as in requiring of a debtor nation virtual relinquishment of control over the source and the output of commodities in which such nation may even enjoy approximate monopoly. Perhaps the suggestion would be regarded as partaking too much of the nature of reparations which victors impose upon vanquished.

Yet an adjustment of international debts on some such basis has much to commend it. It is possible to work out a practicable solution of such a problem, to devise a way whereby mutual needs may be equitably supplied over a long period, and with due regard for national rights. At the same time means may be devised for lightening the load of taxation in war-torn countries. The chances are, too, that such international cooperation, whether effected directly or through the mediation of a concert of nations, would do much to lessen the tension of international rivalry, and may even go a long way toward averting conditions that so easily lead to war.

What such a colossal trade agreement would mean to the rubber industry, for instance, can only be conjectured. Obviously it should conduce to stability, insure ample supplies at prices fair to seller and buyer, and encourage investment in the production of both raw and finished materials. The problem is admittedly a big one, and one worthy of the early and earnest consideration of far-seeing statesmen.

Economy as a Boomerang

More general repairing and even war-time economy are urgently advocated in some quarters as a means of conserving rubber and bringing about, through lessened consumption, lower prices for the crude material. It is even claimed that in this way the use of crude rubber might be reduced to three-quarters of the present consumption without putting consumers at an appreciable disadvantage.

If the effort to simplify sizes and types of tires is successful that alone should do much toward husbanding rubber reserves and keeping crude prices within reasonable limits. Danger lies, however, in consumers of all kinds

of rubber goods misconstruing the plea for economy in an eagerness to aid the government in overcoming a real or apparent monopoly. They might deem it their duty to buy fewer rubber goods; and it is not hard to foresee how such ill-advised thrift might adversely affect rubber manufacturers and employes, as well as purveyors of all kinds of materials and machinery for the industry.

If the sole object were to better the market position of purchasers of the crude commodity, it would appear to be quite sufficient to exhort rubber manufacturers to exercise the utmost frugality and resourcefulness without also broadcasting a general appeal for economy in the use of rubber goods that might easily prove a two-edged sword and do as much harm as good.

Accident Prevention in Rubber Plants

ACCIDENTS in the rubber industry are undoubtedly being reduced, due to the efforts of the Rubber Section of the National Safety Council. Favorable reports have come from both large and small rubber factories which have been the pioneers in accident prevention work. Not only have accident frequency and severity rates been lowered but phenomenal records have been made in the way of prolonged periods during which no tabulatable injury has occurred. Some large plants have gone without accidents for several consecutive months. Others have been able to go three or four years.

And yet, accidents continue. Why? Because industrial executives, especially those of smaller plants, have yet to learn that accidents don't have to occur and don't know that accident prevention work yields larger dividends than almost any other industrial enterprise. Too many executives have left safety work solely to foremen and others who have been "too busy" to give the subject the necessary attention.

The development of the safety movement in the future should be more rapid than in the past. Perhaps in a few more years we may be justified in expecting its success to be clearly reflected in local, state and national statistics.

Divorcing Government from Business

LESS government in business, forestalling meddlesome legislation, freedom from interfering commissions, decreasing dependence upon courts, and the removal of common causes of litigation, are the outstanding advantages now accruing to industry through the setting up of standards of production, materials, manufacturing and merchandising methods by over 250 national organizations. Business is learning at last how to police itself, instead of referring to others manifestly incapable of settling technical disputes or mooted questions between buyers and sellers or shop owners and employes.

No one appreciates the movement to have industry settle its own affairs without recourse to the courts more than the progressive jurist. None better than he realizes the folly of costly lawsuits hinging, for instance, on the interpretation of such loose phrases as, "all material shall be of the best commercial quality" and "good workmanship shall be required throughout." But when industry establishes definite codes and precise criteria covering all conditions that may occasion debate, courts will have small patience with terms so vague; and more likely than not many a future action will be decided not so much on hypotheses and technicalities as upon proofs adduced as to whether standard practise with the force and virtue of the law of the land was fairly upheld or wilfully ignored.

The rubber industry has had more than its share of unnecessary legislation and litigation. To its credit it can be said that it has done a great deal toward improving conditions, especially in promoting standardization and simplification and effecting more efficient distribution; but much yet remains to be done before the goal can be reached where industrial agencies will supersede courts and legislatures in solving industrial problems. In the tire field alone, if standardization is to be secured and economical production furthered, it is necessary for automobile manufacturers to give the tire manufacturers much more cooperation in determining specifications, methods of test, nomenclature, and dimensions of tire equipment.

Group Insurance

EVIDENCING abounding faith in the merits of group insurance, a great industrial concern has just negotiated a policy for $170,000,000 covering the lives of 70,000 employes. Recently a railroad company took out a similar policy for $151,000,000.

Since the advantages of such insurance were pointed out to the rubber industry by this journal some months ago, group insurance has been made even more attractive and several rubber manufacturers have adopted it. Employers may now pay all or part of the premiums, the individual's earnings and length of service may determine the amount of benefits, employes may buy additional insurance at the low group rate, policies may cover both death and disability, and no physical examination is required.

The state workingmen's insurance schemes in Europe long lauded by labor agitators ill compare with the joint corporate plan evolved during the past decade in America, for here the insured gain much more, while self respect is fostered, ambition encouraged, and loyalty to employers markedly enhanced.

As a prophylactic against one of the most dreaded ills of industry—labor turn-over—group insurance has proved itself a measure of remarkable efficacy.

ALTHOUGH IT MUST BE QUITE DISCOMFITING TO MEMbers of Congress who have asserted that tire manufacturers have been taking undue advantage of the high price of rubber by overcharging consumers, the announcement of a tire price reduction of from 3½ to 12½ per cent comes as a peculiarly timely refutation of the unjust accusation.

The Rubber Exchange of New York, Inc.

Inauguration of the Only Exclusive Rubber Exchange—President Henderson's Opening Address—Prominent New York Exchange and Bank Officials Express Approval at India House Luncheon—Functions of the Exchange and Clearing House

TRADING in rubber with a market value of more than $500,000, the Rubber Exchange of New York, Inc., 31 South William street, New York, N. Y., opened for business at 10 a. m. February 15, 1926. The opening trading was marked by exciting bidding, 64 contracts of 2½ tons each being dealt in during the first hour.

Opening Day at The Rubber Exchange of New York, Inc.

In declaring the Exchange formally opened, President Francis R. Henderson said that the Exchange would add a worthy chapter to the record of American marketing methods. The rise of rubber to its present importance was one of the romances of modern business. Commenting upon the recent marked fluctuations in the price of crude rubber, he said:

"Over production plus temporary under consumption brought ruinously low prices in 1921. Then artificial restriction of production brought about a temporary scarcity last year with very high prices. Enforced curtailment in consumption was the inevitable result with a consequent decline in prices. In each case the market had no shock absorber, and price movements were dangerously violent.

"The inauguration of the Rubber Exchange of New York will provide a greater number of traders in rubber, and through its greater breadth the market will absorb the purchases and sales in a more orderly manner. This will provide the necessary brake on price movements which will give producer and consumer the opportunities of safeguard they justly demand."

At a luncheon given by the Board of Directors of the Exchange at India House on the opening day, President Henderson acted as toastmaster and expressed his gratitude to officials of the New York Cotton, New York Produce and the Coffee & Sugar Exchange for the help they had given in the organization of the new exchange.

Richard T. Harriss, president of the New York Cotton Exchange, in a brief address, congratulated the rubber industry upon the opening of the Rubber Exchange which he said marked an epoch in the business. He believed that as the years go by the real function of the Exchange will be more and more appreciated and regarded as a monument to the foresight of those who have brought it into being. J. Barstow Smull, president of the Produce Exchange, spoke of the effort which his exchange had made to have the rubber people form an exchange in conjunction with his exchange and said there are not a sufficient number of open markets in New York where futures can be dealt in.

C. R. Berrian, vice-president of the Central Union Trust Co., said there is good reason to believe that the Rubber Exchange will have a steadying effect on prices and so contribute to safeguard the industry. The great function of the Exchange is to offer a concentrated, centralized rubber market where—to quote some well known authority — open prices will be openly arrived at.

Objects of the Exchange and Clearing House

The Exchange and the Clearing House, both incorporated under New York State laws, function together as one would be of little use without the other. The objects of the Exchange, which begins business with its full authorized quota of two hundred and fifty members, are:—

To provide, regulate and maintain an exchange and to furnish facilities to its members for the purchase and sale of crude rubber, siak, pontianak, gutta percha, balata, guayule, and other products partaking of and akin to the same qualities possessed by rubber; to establish just and equitable principles in the business carried on by and between its members; to maintain uniformity in rules, regulations and usages in the business; to effect standards of classification in said business; to acquire, preserve and disseminate useful information in connection with the business throughout all markets; to decrease local risks attendant upon the business; and generally, to promote and facilitate the business of buying, selling, dealing with and dealing in the above mentioned products and to create among the members facilities with which such or similar businesses may be conducted.

The officers of the Exchange are:—F. R. Henderson, president; Walter Dutton, secretary.

The incorporation papers of the Clearing House state that:—

The purposes for which it is to be formed are the purchase and sale of crude rubber, siak, pontianak, gutta percha, balata, guayule,

and other products partaking of and akin to the same qualities possessed by rubber, for future delivery, and the acquisition by purchase or otherwise of contracts made in accordance with the by-laws, rules and regulations of The Rubber Exchange of New York, Inc.; for the purchase or sale of crude rubber, siak, pontianak, gutta percha, balata, guayule, and other products partaking of and akin to the same qualities possessed by rubber, for future delivery, and the assumption of the obligations arising thereunder; the settling, adjusting and clearing for compensation of such contracts; the buying, selling, receiving, carrying, storing and delivering of crude rubber, siak, pontianak, gutta percha, balata, guayule, and other products partaking of and akin to the same qualities possessed by rubber, but only in connection with the foregoing purposes; the protection of the corporation against loss in its business by establishing a guaranty fund to be raised by contributions by and assessment upon stockholders, as may be prescribed by its by-laws.

The incorporators and first directors are: Edward Maurer, Fred W. Dunbar, and Clarence H. Low.

Salient Points in the By-Laws

At a meeting of the Exchange in its new quarters on South William street, New York, February 11th, last, an elaborate set of by-laws was approved by the members. Summarized as briefly as possible the leading points are: The Board of Governors shall consist of the President, Vice-President, Secretary, and six other members, and that no member of the board shall receive any salary; The annual meeting for election of officers shall be held on the third Tuesday of October; The first two hundred persons elected to membership shall pay an initiation fee of $1,000; Further members in excess of two hundred shall pay an initiation fee of a sum, not less than $1,000, at the discretion of the Board; The Board shall have the power to appoint fifteen committees: (1) Executive Committee; (2) Finance Committee; (3) Supervisory Committee; (4) Committee on By-Laws and Rules; (5) Committee on Membership; (6) Committee on Information and Statistics; (7) Arbitration Committee; (8) Board of Appeals; (9) Quality Committee; (10) Nominations Committee; (11) Committee on Commissions; (12) Adjustment Committee; (13) Floor Committee; (14) Committee on Business Conduct; (15) Committee on Publicity.

The Executive Committee is to consist of the President, Vice-President, and three members of the Board who shall have general charge of all the activities of the Exchange. The duties of the other committees are indicated by their titles, those of the Arbitration Committee, the Board of Appeals, and the Quality Committee being the most important.

Buyers' and Sellers' Contract Slips

Contract slips used by buyers and sellers of rubber on the Exchange must be in the following form:

New York.....

SELLER .....

BUYER .....

Subject to the Rules and By-Laws of The Rubber Exchange of New York, Inc.

Number of Tons of Rubber	DELIVERY IN	PRICE

_____ Atty.

Form of Contract

The form of contract recognized will be:

THE RUBBER EXCHANGE OF NEW YORK, INC.

CONTRACT

New York, 192

A B & C have this day (Sold) (Bought) and agreed to (Deliver to) (Receive from) .....

5,600 lbs. (five thousand six hundred pounds)

RUBBER

at a price of ..... c. (cents) per lb. for STANDARD QUALITY HEVEA RIBBED SMOKED SHEETS, with additions or deductions for other grades in accordance with the provisions of the By-Laws, Rules and Regulations of The Rubber Exchange of New York, Inc., deliverable between the first and last days of ..... inclusive, the delivery within such time to be at the seller's option, upon notice to buyer as provided by the By-Laws, and Rules of The Rubber Exchange of New York, Inc.

Either party may call for a margin as the variations of the market for like deliveries may warrant, which margin shall be kept good.

This contract is made in view of, and in all respects subject to the By-Laws, Rules and Regulations established by The Rubber Exchange of New York, Inc., and all differences and/or disputes that may arise hereunder shall be settled by arbitration pursuant to such By-Laws, Rules and Regulations.

For and in consideration of $1.00 (one dollar) to the undersigned in hand paid, receipt whereof is hereby acknowledged, the undersigned accepts this contract with all its obligations and conditions.

Grades of Hevea Plantation Rubber

In contracts for future delivery, Section 36 of the By-Laws provides that the following grades of Hevea plantation rubber may be delivered on exchange contrasts:

STANDARD QUALITY RIBBED SMOKED SHEETS
STANDARD QUALITY FIRST LATEX CREPE

GOOD F. A. Q. RIBBED SMOKED SHEETS (Rubber Exchange type) at an allowance of 2 cents per pound.

OFF QUALITY FIRST LATEX CREPE (Rubber Exchange type) at an allowance of 2 cents per pound.

ORDINARY F. A. Q. RIBBED SMOKED SHEETS (Rubber Exchange type) at an allowance of 4 cents per pound.

Adjustments for mould on deliveries of Standard Quality Ribbed Smoked Sheets, Good F. A. Q. Ribbed Smoked Sheets, and Ordinary F. A. Q. Ribbed Smoked Sheets shall be made by the Quality Committee in accordance with rule governing arbitration, except that Standard Quality Ribbed Smoked Sheets with top and edge mould shall be taken without allowance.

Commission Rates

The following rates of commission are the lowest that may be charged on transactions for future delivery: (a) For each 5,600 pounds bought or sold for any person residing in the United States or Canada who is not a member of the Exchange $12.50. (b) For each 5,600 pounds bought or sold for any person residing outside the United States or Canada who is not a member of the Exchange, the foregoing rates plus $2.50. (c) Rates for members domiciled in the United States and Canada $6.25 for each 5,600 pounds. (d) Rates for foreign members $8.75. (e) For each 5,600 pounds bought or sold by one member for another giving up his principal on the day of transaction, $1.25. (f) $2.50 for each 5,600 pounds bought or sold where one member clears for another member transactions made or initiated by him personally or for his account while present on the floor of the Exchange.

Trading Rules

The trading hours on the Exchange will be the same as on all other New York exchanges,—from 10 to 3; Saturdays, 10 to 12.

On and after April 1, 1926, the Board may, at its discretion, require members to pay exchange fees not to exceed the following rates: Five cents per contract on floor brokerages to be paid by the floor broker. Two and one half cents per contract on clearances to be paid by the member clearing the contract. Five cents per contract on contracts carried by members for their own account where a commission is not charged. Ten cents per contract on contracts where a commission is charged, when for a member to

be paid by that member, and when for a non-member to be paid by the carrying member.

The trading rules adopted in the By-Laws are most explicit, and are drawn with special reference to safeguarding both buyer and seller. Among other things they provide that no contracts for future delivery shall be made except for the current month or one of the next succeeding eleven months; that 5,600 pounds (2½ long tons) shall be the trading unit; that unless otherwise stipulated the rate of brokerage for other than future delivery shall be ¼ of a cent a pound, payable by the seller; that all trading in current month contracts shall cease on the tenth day of that month, and that "puts" and "calls" are prohibited.

In much detail the rules provide for the manner in which actual trading shall be conducted on the floor of the Exchange; for the manner and form in which bids shall be made and how accomplished; for margin protections; defaults in deliveries; penalties therefor; validity of contracts; transfer of contracts by means of prescribed forms; of extension of credits; of trading limitations which shall not exceed in any one day a spread of price of more than five cents a pound.

Members of the Exchange have the right to clear their transactions for the future delivery of rubber through the Clearing House subject to certain rules and regulations laid down in the By-Laws of the latter. In such transactions the deposit with it of the sum of $10,000, known as the "Guaranty Fund," is required. In addition to this fund, members must deposit with the Clearing House an original margin upon his net interest in his contracts with it of not less than $200 nor more than $600 for each unit contract of 5,600 pounds; and not less than $25 nor more than $100 per contract for his straddle interest.

The Rubber Exchange, like other commodity exchanges, will cater to two classes of men; to the "public," as speculators, a most important factor, and to the members of the trade who need its facilities to further their daily transactions. The "public," through its brokers and the large brokerage houses, speculate in stocks, cotton, grain, provisions and all commodities where exchanges have made a ready, immediate and reliable market at a price known to everyone. It is largely the vast army of speculative traders that make these markets, that create the demand that governs and stabilizes prices. Without their assistance, there would be times when there would be only sellers in the field, and prices would fall violently (as has often been the case with rubber) or when there were buyers only, when prices would mount (also a common experience). Lacking, in the past, an exchange offering facilities to the "public" to trade in rubber, this essential commodity has been at the mercy of sellers who have dominated prices by reason of its scarcity; has been at the mercy of buyers who have dominated the market by reason of a surplus. The rubber trade needs the stabilizing influence of these speculative traders—these "bulls" and "bears"—and offers facilities for their reception.

Hedging Against Forward Contracts

The main reason for the existence of the Rubber Exchange, or of any commodity exchange, is to afford means for its members to hedge against their forward purchase or sale contracts.

The operation of hedging is too well known, and too generally employed by rubber merchants and manufacturers to be described here in much detail. Hedging, as employed without the assistance of the Exchange, does not always afford full protection. The element of the responsibility of the hedgee (if we may coin the word) is always present. With a hedge conducted through the Exchange, all elements of risk are eliminated. The trader is secure, no matter how the market goes, because the Clearing House stands back of the contracts.

There is one method of hedging which is in regular standard practise in English cotton mills through their Liverpool Exchange. As yet, however, it has not gained much of a foothold in this country. The same principle, it has been suggested, might be applied by rubber manufacturers. Briefly described, the hedge referred to is designed to give protection to one who is constantly manufacturing stock goods of any kind, particularly on a falling raw material market, which is often accompanied by a falling goods market. The manufacturers' remedy, through the Exchange, is to sell rubber futures for succeeding months to the extent of the rubber which he will require each month to manufacture the goods. He can then operate with little risk, as he has safeguarded himself against loss due to the falling value of rubber. Should the price of rubber fall off, say, a cent a pound each succeeding month with a corresponding decline in the value of his manufactured stock goods, the manufacturer would, as each month arrived, buy a contract on the Exchange for an amount of rubber equal to that which he had sold, and at a proportionally less price, thus making a profit on the futures which he had sold to an extent corresponding, approximately, to the lessened value of his manufactured goods. The profit on one side would wipe out the loss on the other. If the market rose, he would lose in replacing his future contracts, but his goods would command a higher price and, again, there would be no loss.

There has long been a desire on the part of rubber dealers and manufacturers to see the rubber market stabilized. Real stabilization has been impossible under conditions that have existed in the past. The organizers of the Exchange do not believe it will prove a panacea for all the ills that have heretofore beset its path. They do believe, however, that the entrance of the speculative "public" into rubber will go far toward eliminating violent swings, and that the trade will be better able to cope with the problem of future contracts than it has ever been before.

AUTOMOBILE INTERESTS DEPLORE RUBBER RESTRICTION

At its meeting in Chicago during the first week of February the National Automobile Chamber of Commerce, through its general manager, Alfred Reeves, entered a protest against the continued restriction of the output of crude rubber. Mr. Reeves said in part:

"Our industry does not object to the high price of rubber if it is the result of supply and demand, but the industry opposes any plan which prevents a person from selling his product at a price he thinks is right. When laws prevent sales of a product in hand, the commodity becomes the football of speculators, who, in the case of rubber, received the higher prices instead of the growers.

"It must be borne in mind that there is still an arbitrary control of rubber supply in the British possessions.

"The so-called 100 per cent production now permitted simply means 100 per cent of the 1920 output which was arbitrarily taken as the standard. If all rubber on hand were shipped the total would probably be 120 per cent of the 1920 production.

"We are hopeful, however, that the British Government will continue to broaden its policy. The return to the so-called 100 per cent plan is a step away from restriction even though it still shuts down on a potential production of 100,000,000 pounds annually."

DIRECTORS INTERNATIONAL ACCEPTANCE BANK REELECTED

At the annual meeting on February 1 of the stockholders of the International Acceptance Bank, Inc., 52 Cedar street, New York, N. Y., Paul M. Warburg, chairman of the board of directors, in a brief address reviewed political and economic conditions during the past year, referring also to the favorable outlook for the present year.

The directors of the bank were reelected for the coming year and the following changes in the official staff were approved: Hugh Knowlton, formerly partner of Appleton, Butler & Rice, was elected vice-president; Fletcher L. Gill, vice-president and treasurer; John P. Collins, assistant vice-president; and B. Hwoschinsky, assistant secretary.

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

NUMBER	INQUIRY
749	Flat band tire machinery.
750	Manufacturers of tire changers.
751	Power skivers used in the make-up of pulled cord patches.
752	Factories which will manufacture rubber heels from furnished molds.
753	Makers of fiber containers for rubber heels.
754	Sole agency in Great Britain for American make of galoshes and rubber boots.
755	Firms making puncture proof inner tubes.
756	Manufacturers of rubber balloons.
757	Mandrels suitable for splicing inner tubes.
758	Source of supply for tire talc.
759	Manufacturers of rubber bags.
760	Information regarding tubing machines.
761	Manufacturers of floating rubber animal toys.
762	Machinery for treating rubber on plantations.
763	Machine for drilling rims.
764	Manufacturers of machine for cutting solid truck tires from steel rims.

Foreign Trade Opportunities

Address and information concerning the inquiries listed below will be supplied to our readers through The India Rubber World, 25 West 45th Street, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
18,806	Germany—Rubberized fabrics	Purchase
18,807	Portuguese East Africa—Rubber and vulcanized soles	Purchase
18,808	Madagascar—Automobile, motor cycle, and bicycle tires	Purchase
18,809	Germany—Rubberized fabrics, sanitary and surgical apparatus, etc.	Agency
18,810	Bolivia—Automobile and truck tires	Agency
18,814	Cuba—Druggists' sundries	Agency
18,828	England—Rubber goods of every kind, including hard rubber products	Agency
18,829	Uruguay—Automobile tires	Agency
18,835	Germany—Automobile tires	Agency
18,860	Australia—Rubber strips for automobile body finishing	Purchase
18,861	Norway—Rubber boots and overshoes	Purchase
18,901	Argentina—Tennis and golf balls	Purchase and Agency
18,912	Czechoslovakia—Best grade automobile tires	Agency
18,914	Germany—Rods, sheets and tubes of hard rubber, and vulcanized fiber, in sticks, sheets, and tubes	Purchase
18,956	Egypt—Tires and tubes, pneumatic and solid, for automobiles, motor cycles and bicycles	Agency
18,972	England—Rubber boots and shoes, and dental supplies	Agency
18,993	Czechoslovakia—Mechanical rubber goods and automobile tires	Agency
19,009	Egypt—Rubber waist belts, and rubber novelties	Purchase and Agency
19,010	Turkey—Rain coats	Purchase
19,011	Germany—Old and waste rubber	Purchase
19,012	Austria—Rubber balloons	Purchase
19,028	Colombia—Rubber boots, garden hose, and gloves	Purchase
19,084	Morocco—Automobile tires and tubes	Purchase and Agency
19,085	Ceylon—Toy balloons	Purchase and Agency
19,086	Czechoslovakia—Automobile tires	Agency
19,089	Germany—Rubber hot water bottles and surgical goods	Purchase
19,125	Yugoslavia—Automobile and truck tires	Agency
19,138	Denmark—Fountain pens	Agency
19,144	Australia—Rubber packings	Purchase
19,148	Wales—Braided rubber hose	Purchase or Agency
19,149	Germany—Molded bottles for hot water	Purchase

JAPAN'S EXPORTS OF RUBBER TIRES INCREASED FROM A VALUE OF 3,239,000 yen in 1924 to 9,507,000 yen for 1925. Japan's exports of all classes of commodities have been steadily increasing during the past two years. The yen in 1924 had an average value of $0.4119, and in 1925 $0.4104.

Foreign Trade Circulars

Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
*1058	"November Imports of Rubber Tires."
1074	"Tire Exporters' Weekly News Letter."
*1075	"Crude Rubber Reexports from United States, Month of December, 1925."
1076	"Mechanical Rubber Goods Exporters' Monthly News Letter."
1077	"Market for Machinery Belting in Ceylon."
*1078	"Canadian Tire Exports During December, 1925."
*1079	"December Imports of Rubber Tires."
1081	"Tire Exporters' Weekly News Letter."
*1082	"Canadian Tire Exports Heavy During Calendar Year 1925."
*1084	"Canadian Exports of Rubber Belting and Hose During 1925."
1086	"Tire Exporters' Weekly News Letter."
*1087	"Comparative Statement Showing Number of Pounds of Rubber Belting Shipped from United States to Foreign Countries During 1923, 1924 and 1925."
*1088	"Comparative Statement Showing Number of Automobile Casings Shipped from United States to Foreign Countries During 1923, 1924 and 1925."
*1089	"Comparative Statement Showing Number of Pounds of Rubber Hose Shipped from United States to Foreign Countries During 1923, 1924 and 1925."
*1090	"Comparative Statement Showing Number of Pounds of Rubber Packing Shipped from United States to Foreign Countries During 1923, 1924 and 1925."
*1091	"Rubber Footwear Exports from United Kingdom During Month of December, 1925."
*1092	"British Exports of Automobile Casings During Month of December, 1925."
*1094	"British Exports of Rubber Boots and Shoes, 1925."
*1096	"Survey of United States Rubber Reclaiming Industry."
1097	"Rubber Footwear Exporters' Monthly News Letter."

THE BEST SPEED FOR A RUBBER BELT

By W. F. Schaphorst

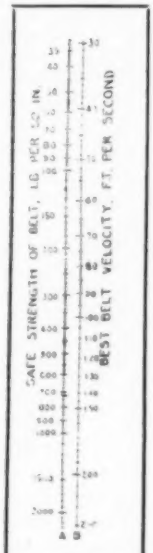
There is no question that centrifugal force will "explode" any belt, if the speed of the belt is high enough. A rubber belt of 1,000 pounds breaking strength per square inch will explode without pulling an ounce of load when running a trifle over three miles per minute. Also, a belt won't do anything when it isn't moving—when its velocity is zero.

Therefore, somewhere between zero velocity and 3 miles per minute there is a "best belt speed," and at that speed the belt will transmit the most power.

The accompanying chart gives the best speed for any rubber belt of known safe strength.

Find the safe strength of the belt in Column A, Column B will then give the best velocity. All you need do is to glance across from Column A to Column B. For example, if the safe strength is 200 pounds per square inch (which would be a second-class rubber belt), the best velocity is 74 feet per second.

It is assumed here that the belt is not subject to needless initial tension in addition to the tension of centrifugal force and the load tension on the tight side. If initial tension is practised it is difficult to tell just what the best speed would be, because such practise sometimes breaks belts even before they do any work at all. Certainly, high initial tension reduces the speed to a much lower figure than given in this chart.



Rubber Belt Chart

This chart, therefore, should prove to be an important aid in the selection of belts and pulleys. It shows clearly the advantages of strong rubber belts, and high speed means high power. It shows that new strong belts should be run at high speed. As they grow older and weaker they can be used on slower drives and replaced on the high speed drive by new and stronger belts.

America's Holdings in Rubber Plantations

By Richard Hoadley Tingley

THE prevailing high price of crude rubber has given that industry a more prominent place in the public eye than it ever before enjoyed. We are constantly being told that "America must grow her own rubber," and from time to time reports come through telling of this or that acquisition of rubber plantations, of the acreages, cost, and number of trees involved. Just how far we have gone in our endeavors to free ourselves of British domination is shown by the following figures which approximately represent the true state of affairs.

Before presenting to-day's picture of America's rubber holdings in alien countries it is interesting to note the progress made since the latter part of 1920. At that time there were but four American companies owning and operating rubber plantations in the Middle East.

AMERICAN RUBBER PLANTATIONS—1920

COMPANY	Bearing	Planted Not Bearing	Cleared Not Planted	Reserved	Total Acres
U. S. Rubber	43,000	11,000	....	63,000	117,000
Goodyear	2,000	9,000	9,000	....	20,000
Manhattan	1,200	800	....	....	2,000
Continental	....	2,000	2,000	16,000	20,000
Total acres	46,200	22,800	11,000	79,000	159,000

In 1920, America's total cash investment in rubber plantations amounted to between $15,000,000 and $16,000,000. Their actual value, however, was held to be from two to two and a half times that amount, though fluctuating with market conditions, prices and other factors. At that time crude rubber was selling around 17 cents a pound, and a large surplus was worrying rubberdom.

United States Rubber Co.—Sumatra

The approximate picture, as it stands today, is shown in the following tabulations, only Hevea acres, as before, being noted.

AMERICAN RUBBER PLANTATIONS—1926

COUNTRY	U. S. Rubber	Goodyear	Continental	Manhattan	Firestone (b)	American	Rio Grande (a)	Total Acres
Sumatra	94,324	20,000	20,000	....	....	....	...	134,324
Malaya	29,690	....	....	....	....	....	...	29,690
Java	....	....	....	2,000	....	....	...	2,000
Philippines	....	....	....	....	....	1,625	360	1,985
Liberia	....	....	....	....	1,100	....	...	1,100
Total acres	124,014	20,000	20,000	2,000	1,100	1,625	360	169,099

(a) Scottish-American. (b) Formerly Monrovian Rubber Co., Ltd.

The total six-year increase in acreage controlled, from 159,000 acres in 1921 to 169,099 acres in 1925, represents about 6⅓ per cent.

AMERICAN RUBBER ACREAGES PLANTED—1926

COUNTRY	U. S. Rubber	Goodyear	Continental	Manhattan	Firestone	American	Rio Grande	Total Acres
Sumatra	53,572	10,000	4,000	....	....	....	....	67,572
Malaya	28,197	....	....	....	....	....	....	28,197
Java	....	....	....	1,500	....	....	....	1,500
Philippines	....	....	....	....	....	1,625	360	1,985
Liberia	....	....	....	....	1,100	....	....	1,100
Total acres	81,769	10,000	4,000	1,500	1,100	1,625	360	100,354

Approximately 84 per cent of the total area, or 84,000 acres, are now tappable.

Goodyear Tire & Rubber Co.—Sumatra

Total area planted, Middle East, 4,296,000 acres; total planted area, American controlled, 100,354 acres; American percentage of total, 2⅓ per cent; total area planted, British owned, 2,961,000 acres; American percentage of British total, 3.4 per cent.

APPROXIMATE NUMBER OF RUBBER TREES ON AMERICAN CONTROLLED PLANTATIONS

Sumatra	7,000,000
Malaya	2,800,000
Java	92,000
Philippines	205,000
Liberia	135,000
Total	10,232,000

The capital invested in plantations of the Middle East, totals $876,000,000, of which American capital is represented by $32,000,000, or 3.6 per cent of the total. Included in the total investment is $505,000,000 of British capital of which the American percentage is 6.3 per cent.

Since the United States Rubber Co., through its subsidiary companies, is the largest single factor in United States rubber production, an analysis of its holdings and operations is here shown.

UNITED STATES RUBBER CO.

ACREAGE HELD		
Sumatra	94,324	
Malaya	29,690	
Total	124,014,	or 194 square miles
ACREAGE PLANTED		
Sumatra	53,572	
Malaya	28,197	
Total	81,769,	or 128 square miles

The percentage planted is 66 per cent of the total controlled, and 49,896 acres are in bearing. Percentage of bearing area to

area planted is 61 per cent, and the number of trees planted is about 7,000,000. The yield in 1925 was 20,000,000 pounds.

The principal American holdings of the rubber producing properties other than the Hevea, are those of the Intercontinental Rubber Co. in Mexico, and comprise about 1,800,000 acres, only a limited portion of this guayule acreage however, being utilized.

Continental Plantation Co.—Sumatra

The company has four factories where the guayule shrubs are put through a mechanical crushing and flotation process. The capacity of the mills is 800,000 pounds of rubber per month.

The only rubber now produced in the United States is the small quantity of guayule at Marathon, Texas, in the big bend of the Rio Grande. Following several years of successful operation from 1905 to 1914 the plants at Marathon were obliged to shut down on account of the depletion of the stock of guayule shrub. Since last July, however, operations have been resumed by the Border Rubber Co., which now holds the distinction of being the only producer of rubber of any kind on United States soil.

Reviewing the foregoing, it seems evident that the United States has a long road to travel before it can rid itself of foreign domination in rubber. Experiments are now in progress with the Hevea and other tropical plants in Haiti and the Canal Zone. The northern

Manhattan Rubber Manufacturing Co.—Java

limit of the Hevea is yet unknown. In Haiti small plantings, now twenty years old, have grown good rubber, but the flow of latex is greatly reduced in the winter months. Available Haitian areas, moreover, are limited in extent. There are Hevea potentialities existing in Southern Mexico and Central America. The trees, apparently, flourish in this soil and climate, but as yet definite, tangible results have not been reached.

The United States consumes approximately 385,000 tons of crude rubber a year, and it seems evident that this quantity will increase rather than diminish; 385,000 long tons is equivalent to 862,000,000 pounds. Since the average production of rubber plantations is not far from 300 pounds per acre a year, and the average cost to bring an acre of jungle into full bearing is estimated to be about $500, it is evident that an area of 2,873,000 available acres must be found, planted and brought into bearing under American ownership at a cost of nearly $1,500,000,000 before the United States can be entirely free from foreign domination in rubber. The sum total of available areas now existing in the Philippines added to Mr. Firestone's Liberian acquisitions just about match that quantity, but are American investors prepared to spend that huge sum of money in order to produce 385,000 tons of its own rubber a year?

Balloon Tires on Buses

Recent discussion[1] of wheels, brakes and balloon tires for heavy duty vehicles developed some facts and tendencies of interest in regard to the use of balloon tires. A leading engineering authority on tire manufacture and performance stated that pneumatic tires for motor coaches now require from 90 to 100 pounds per square inch pressure and when pumped up to that pressure are somewhat hard. As a result the vehicle is severely wrenched in its structure, riding is uncomfortable and necessitates the use of special seats to reduce the jar for the comfort of the passengers. It is believed that a pressure of 45 to 50 pounds is ample for motor coach tires and a line of balloon tires is under development for this service. Practically the same difficulties have been encountered as in developing balloon tires for ordinary passenger automobiles. The fact of harder steering, because of the larger area of contact with the road seems to be the only hindrance to be met in operating the vehicles. Braking must be improved, but fuel consumption will be no higher. One of the principal difficulties is produced by overloading. The decrease of tire mileage due to overload can be charted in terms of mileage expectancy. The opinion has been expressed that the use of balloon tires on heavy duty vehicles will come sooner than most motorcoach engineers appreciate because of their approval by the operators and their patrons.

Pneumatic tires are not adapted to all classes of service but it is possible to use wheels on which a change from solid to pneumatic tires can be made when considered desirable. It is possible to mount a pneumatic-tired wheel in combination on the same hub. Motor coaches thus equipped allow the vehicle to ride on the pneumatic tires when operating under light loads and on both the solid and the pneumatic tires when the load increases to a point at which the pneumatic would be overloaded. The quality of riding is said to be better than that of solid tires alone and to be only slightly worse than that on exclusively pneumatic tires.

The following observations summarize the study of 300 balloon tires in heavy duty service: The mileage to be expected appears to be equal to that of high-pressure tires; as new wheels, and usually new hubs and brake-drums, are required in practically every case where dual rear wheels are used, the cost of changing over from high-pressure tires is high, consequently, the proper place for introducing the balloon tires is as original equipment on new motorcoaches; results show that punctures do not occur more frequently than with high-pressure tires; a decrease in the running-time is possible because of an increase of the minimum speed without increasing the maximum speed, owing to the fact that slowing-up is not necessary in passing over rough portions of the road; balloon tires add to the safety of the motorcoach because of their ability to hold the road on wet as well as dry surfaces better than do high-pressure tires; passengers unanimously express their satisfaction with the improved riding quality.

[1] Regular monthly meeting, Cleveland Section, Society of Automotive Engineers, November 16, 1926.

Curing Rubber Coated Fabrics by the Peachey Process

THE experiments and researches of S. J. Peachey in the cold curing of rubber led to the discovery that alternate treatment with the two gases, sulphur dioxide (SO_2), and hydrogen sulphide (H_2S), resulted in a definite vulcanization at ordinary atmospheric temperatures, comparable with the cures obtained in heat vulcanization. This phenomenon is ascribed to the nascent or atomic state of the sulphur produced by the reaction of the two gases within the rubber, which enables the sulphur to combine with the rubber without the intervention of heat.

The Peachey process in its numerous applications is peculiarly suitable for curing rubber coated fabrics, and this particular branch of the process is now being applied successfully in Great Britain. It will be obvious that the design of the plant for handling and controlling the gases in the curing operation is of first importance. Two methods, each differing in its mechanical fundamentals, are available—the static method, and the continuous method. The former being simpler to evolve and erect, has been successfully employed for nearly a year by a British textile concern, and arrangements have been made for installing a continuous curing unit which is expected to considerably reduce working costs.

Of the two gases used, sulphur dioxide is obtained from chemical manufacturers in steel cylinders in liquid form, and the hydrogen sulphide is produced in a special generator by the action of sulphuric acid on ferrous sulphide. In the latter case, the gaseous product, hydrogen sulphide, is stored in a gasometer, which acts as a reservoir balancing the output of the generator with the requirements of the curing chambers. The sulphur dioxide cylinders are connected to a pipe line which conveys the gas into a large reservoir, where the gaseous sulphur dioxide is maintained at pressures ranging from 5 to 20 pounds per square inch. The container is fitted internally with a small steam coil to counteract the drop in temperature due to the loss of heat which becomes latent in vaporizing the liquid sulphur dioxide.

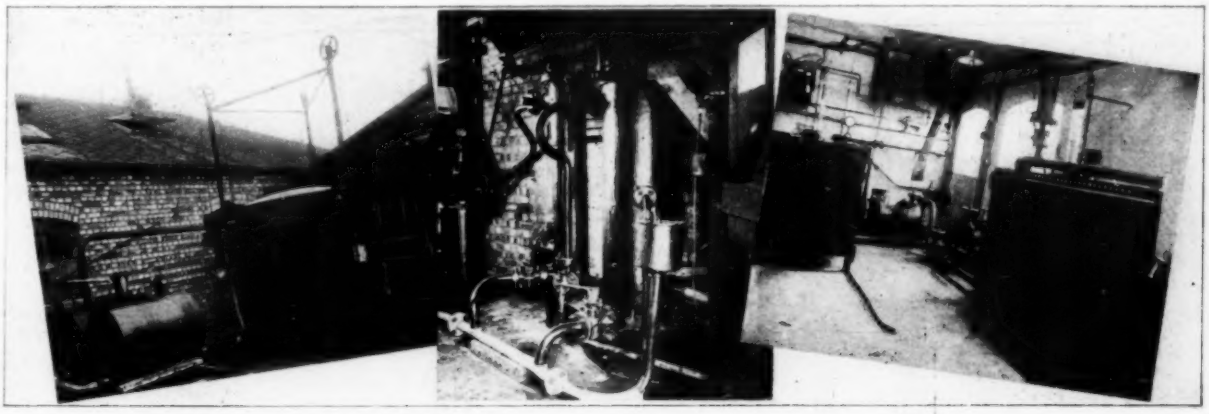
A single unit of the actual curing plant consists of a mild steel gas-tight chamber of requisite dimensions equipped with three or four suitable wood racks on which the rubber coated fabric is batched, and a pressure blower capable of displacing the cubical content of the chamber in one minute. These, in addition to appropriate pipe lines and valves, constitute a curing unit.

The curing operations embody three standardized factors: time of exposure to each gas, period of aeration between treatments with the gases, and the concentration of gas used. Each of these varies within the limits of optimum results in the curing of widely different types of materials, but the same factors apply to practically all classes of standard type proofings. Experiments have proved that excellent results are obtainable with relatively low concentrations of each of the gases.

The fabrics are festooned in regular formation on specially constructed curing racks fitted with trolley wheels to facilitate transit to and from the chamber. When a "charge" is placed in the chamber a known volume of gas is admitted from the sulphur dioxide gas reservoir and its even distribution obtained and maintained by circulation, using the pressure blower for this purpose. After 10 minutes exposure in the diluted sulphur dioxide the latter is displaced by air from the pressure blower and the supply of air continued for a period of 1¾ minutes to remove the surplus sulphur dioxide. During its immersion in sulphur dioxide the rubber coating dissolves a quantity of this gas and retains it.

Following the aeration period a known volume of hydrogen sulphide is admitted to the chamber and distributed by circulation which is maintained for a period of 35 minutes during which the sulphur dioxide in the rubber reacts with absorbed hydrogen sulphide to form atomic sulphur. The latter combines with the rubber molecule without heating, and the rubber is vulcanized. Before removing the "charge" it is thoroughly aerated by air blowing to remove the last traces of hydrogen sulphide.

The curing operations and control of the gases are simple and effective and the resulting vulcanization does not appreciably vary. The process has no deleterious effects on the fabric or fast dyes and therefore practically any color or type of fiber can be used to make garments and the many other articles in the manufacture of which rubber coated fabrics are used. The most delicate silks, cottons, woolen goods, artificial silks and any combinations of these in self, dual and multi-colorings, are possible with the use of the Peachey process.



GAS HOLDERS GAS GENERATOR CURING CHAMBERS

Apparatus Employed in the Static Method of Curing Fabrics by the Peachey Process

---

DURING THE ELEVEN MONTHS ENDED NOVEMBER, 1925, THE UNITED States exported 1,496,080 pneumatic casings for automobiles, having a value of $18,976,561; 1,357,882 inner tubes, value $2,662,424; and 102,853 solid tires for automobiles and motor trucks, value $2,836,955. Exports during this period of tire accessories totaled 2,214,743 pounds, value $980,981.

Rubber Cove Base and Methods of Installing

By Allan Williams

RUBBER base is used a great deal with rubber floors at the present time, it being non-breakable, noiseless, light, and will stand more abuse than either wood or marble base. There are several kinds of rubber base on the market which have proven very satisfactory.

Referring to the illustration, A is the straight sheet base which is used a great deal for store fixtures and around panel work, being rabbeted in the wood base its entire thickness so that its surface will be flush with the surface of the base as shown at L, which is an end view. The straight base with the rounded top is also shown at A. It is as a rule ¼-inch thick and 6 or 4 inches high.

B is the ¼-inch thick, round top cove base with a 2¼-inch bottom cove. This type is not very satisfactory, for the reason that if a great deal of pressure should occur, the base would push up at the outer bottom edge, especially on concrete underfloors where there is no chance to nail into the floor.

C is the ½-inch thick, round top cove base with black filling. This cove base is desirable as it will not buckle nor push up at the bottom.

D is a ¼-inch thick, round top cove base with the long bottom. This type is used where no filler is required and all corners are mitered. There is no advantage in this type as it is difficult to install and also makes a great deal of waste rubber for each miter when the bottom cove is very wide. When pressure is used it has a tendency to open up in the miter joints which appear very unsightly.

E is a perspective view of a right and left end return. F is a perspective view of an outside corner, and G is a perspective view of an outside corner with a side addition. This idea is good when the backing on the corners is very poor and nailing further from the corner may be a necessity. But this practise is very expensive. Most rubber companies that manufacture cove base use F for right and left end returns, by cutting off the opposite end, besides using it for an outside corner. A left hand return cannot be used on the right hand return but an outside corner can be cut for either left or right hand returns. This is common practise.

Cove base of a small type can be used as a cap molding for wainscoting on side walls when the inside bottom edge is square, by placing it upside down on the wall.

H is the inside corner which is small in size and has no waste. If the corner of the room is out of square ten degrees or so this type of corner can be used to a great advantage whether the room is out of square one way or the other. When no outside and inside corners are used the cost of installation is a trifle more as it requires a longer time to install. The outside corners are mitered and the inside are mitered about one inch on the top only, the rest being cooped together.

Different bases require different pressures. Only a trial can determine the required pressure to insure a first class job. Rubber base should be cemented to the backing and nailed on the top 2½ to 3 inches apart. If rubber base is installed against concrete the prop method should be used and allowed to stand over night.

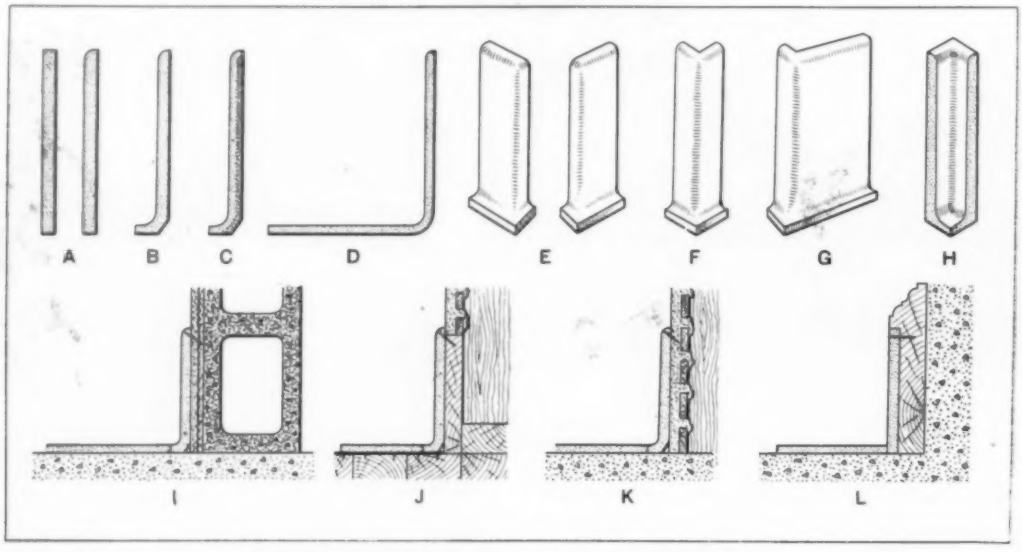
At I is shown a detail end view of rubber base with hollow tile and furring strips for wire laths and the finished plaster coat continuing to the floor.

J shows a detail end view of rubber base set against wood backing, the backing being perfectly straight and used also as a ground for the plaster. If the rubber base is 6 inches, the wood backing should be ¼ of an inch less, making it 5¾ inches. By so doing, the wood and plaster joint is covered and will not be seen when the wood dries out.

Where old wood base is in use rubber base can be installed against it. Where the rubber base is higher than the old wood base proper, the rubber base with a filler cannot be used such as C. If the top is cut off, the black filler will show. If the straight round top base is used the bottom can be cut to suit the unevenness of the top.

K is a detail showing the finished line of plaster wall to the floor.

L is a detail showing straight sheet base rabbeted into a baseboard made of wood.



Types of Rubber Cove Base and Typical Installations

1926 Footwear Prices Higher

Review of Line—Increased Standardization of Product—Outlook Favorable With Snow Arrival in East

THE 1926 footwear line went out to the trade January 1 carrying price increases ranging from 8 per cent on light goods to 20 per cent on boots, heavy gaiters, and lumbermens. Popular priced numbers on which the volume of business is heaviest showed little or no advance, however, and on a few shoes there was an actual reduction.

The companies found the retailer in no mood for placing his order during January, owing to the fact that the winter was late in arriving. This doubtless brought about the reduction of 25 cents a pair on boots announced by one of the big companies February 1 and a return to 1925 prices on several lines of popular-priced gaiters.

With the blizzard of February 4 which swept the East, retail trade picked up, and by April 1 it is expected that stocks will be well depleted which means that present production schedules will be maintained at capacity. Until the arrival of this storm, conditions looked very unfavorable for the rubber footwear business. A glance at the snow chart of the United States Department of Agriculture of February 1 shows that the populous centers of the country where the largest volume of shoes are distributed were practically without snow on the ground. In the Middle West, Chicago and the entire States of Illinois and Indiana bare ground is shown, whereas Boston, New York and Philadelphia had only traces of precipitation.

The footwear manufacturers have followed the general tendency of all rubber lines and simplified and reduced the styles and varieties of their product. Probably the most sweeping change has taken place in the staple line of men's, women's, boys', youths', misses', and children's light rubbers. Last year the Hood Rubber Co. came out with a new idea in rubbers called "Lastics". They are constructed with an especially flexible rolled edge which permits fitting a wider range of shoes with one last. This reduces the number of styles necessary in the light footwear line by nearly 75 per cent. Men's rubbers advanced in price to $1.10 factory for first quality and women's to 84 cents; this is still below the 1920 price of $1.13, and no changes were made in the pricing of this line on the February 1 revision.

The all-cotton 4 buckle gaiter, originated in 1923 by the Cambridge Rubber Co. with the "Glengairn," has proved to be the big volume seller in this class. Most of the companies are using a heavy sateen cloth, bound at the edges, while others have adopted a cotton jersey construction. Last year two grades were offered in this type, the best quality being priced at $2.25 for women's, and the second grade at $2.00. This year the best grade has been eliminated in some lines while others still carry it at the same price. The second grade has been raised from $2.00 to $2.10 and misses' and children's, after being advanced 15 cents per pair January 1, were repriced February 1 at $1.80 for misses' and $1.60 for children's, the same as last year. These are furnished with tan or black lining as desired.

In the high quality class of overshoes, The B. F. Goodrich Co.'s "Zipper" has increased in popularity. Furthermore, the price reduction granted on this shoe from $4.00 to $3.75 will bring it more and more into general use. In competition with this shoe the Hood Rubber Co. has brought out the "Taxi" with a similar-type fastener, designed and manufactured in their own plant. The United States Rubber Co. has also had an automatic fastener gaiter called the "Countess" on the market for two years which has been well received.

In the endeavor to catch the people who desire the features of this type of shoe for less money, Goodrich has brought out a "Zipper" of all rubber construction which sells for $3.35. The Firestone-Apsley "Sheba" gaiter with an attractive buckle strap and buttons instead of buckles has proved popular.

Interest in winter sports is increasing every year, and has been a great boon to the leather-top lumbermen business. Formerly this type of shoe found distribution only in the lumber and mining centers, but now all the city department and sporting goods stores carry them for their regular customers. Many of these shoes carry the rubberized crêpe sole.

The distribution of the rubber white "pac" has been hampered by the anthracite coal strike as many of these shoes are sold to the miners. Heavy work rubbers are carried in as many as three price levels; there is need for standardization here. Prices range from $1.65 to $1.30 under the new schedule. These shoes find wide favor with postmen, railroad workers, and farmers.

Boot sales outside of the industrial field have been light, partly due to the price increase and partly to the lack of seasonable weather. Boots are the biggest rubber consumers in the line, and consequently had to be raised in greater proportion to the light goods. Pressure cured numbers in black, white, and red are still the predominating values.

In fact the condition of the raw material markets and the uncertainty of the retail situation have made the manufacturers very conservative about adopting new ideas in footwear at this time. About the only new shoe, distinctive in type, is the "Bobbette" offered by Converse, a low cut cuff gaiter with snap button fastenings. It is designed to fill the demand for a quick-removable shoe, from the trade who want something lower priced than the "Zipper."

Other numbers somewhat out of the ordinary are the "Motorman's" gaiter, a heavy heel, shoe buckle and lace type of overshoe put out by Converse, a strap and loop storm rubber of Firestone, the Belmont "Bunny" boot of Hood, and the Alba "Closed Quarter," all-rubber overshoe of La Crosse.

In Canada prices have been raised still higher than this country. Men's light rubbers are quoted at $1.25, women's at 90 cents, and chain fastener gaiters are $4.95 for women's. No cotton gaiter line is carried, so that our neighbors across the border are paying considerably more for their rubber footwear this year.

The backward season also led to considerable price cutting among department stores in the large cities. In one instance, women's all-cotton gaiters were reduced in retail price from $2.95 to $2.39 by this practise. This is considered unfortunate among footwear manufacturers as the values offered today are the greatest in the history of the business, there being no justification for selling at no profit or less than cost. Two years ago a woman had to pay $4.50 for a first quality overshoe in the stores, whereas today she certainly would be willing to pay $3.00 for the same article without the worsted jersey cloth upper.

Tennis production is starting up in the factories, but the advance orders have not been exceptionally heavy. In fact rubber footwear manufacturers have already learned that hand-to-mouth buying is something more than a temporary emergency measure, and have had to readjust their business habits to conform to it.

AMERICAN EXPORTS DURING NOVEMBER, 1925, OF CANVAS RUBBER-soled shoes totaled 362,511 pairs, value $259,660, as compared with figures for the month previous of 338,800 pairs, value $249,318. In both months Argentina represented the leading customer, taking in October 110,008 pairs, value $64,268, and in November 137,556 pairs, value $79,629.

A. C. S. Rubber Division Meeting

A JOINT meeting of the Division of Rubber Chemistry and the Akron Section of the American Chemical Society was held in Akron, Ohio, February 22 and 23, 1926. There was a large and representative attendance of rubber chemists and technologists. The papers presented numbered sixteen and occupied three sessions. A tea and musicale was given to the visiting ladies at the University Club, February 22, in the afternoon and in the evening the chemists held a banquet at the Firestone Club House. The following day a luncheon and bridge party was given for the ladies at the Portage Country Club.

Abstracts of Papers

The Guanidines as Accelerators. The behavior of substituted guanidines and their efficiency as accelerators are found to be dependent on the nature of the groups substituted. Guanidines have been prepared of activity varying from completely non-accelerating to accelerators of high activity. A theory to explain this variation in activity within its class is developed.—H. W. Elley and D. H. Powers.

Internal Mixers for Rubber Stocks. The use of internal mixers instead of roll mills has become of increased importance in rubber goods manufacture where formerly practically the only application was for mechanical goods stocks. This type of mixer is now widely used for mixing tire stocks and all grades of master batches as well as for breaking down crude rubber in cases where large amounts of rubber compounds are processed. A certain heavy duty type is successfully used for warming cold mixed stocks preparatory to calendering or tubing, and in a few instances internal mixers are employed to mass reclaimed rubber.

Recent mechanical improvements and more efficient cooling facilities have advanced internal mixers in favor. Methods of mixing typical rubber stocks are discussed, and rates of mixing and various data are given based upon experience with one of the best known makes of internal mixers. It is usually advantageous to add to a mix previously broken down rubber. The material from these mixers must be sheeted on a roll mill and in the case of sensitive stocks the sulphur must be added and incorporated on roll mills.

The quality of stocks mixed in an internal mixer is uniform and just as good as that from roll mills; but there is a tendency for the former to be tougher and premature vulcanization of sensitive stocks must be guarded against. These conditions are due to the fact that the internal mixer has less cooling area in proportion to the material handled. These difficulties are not usually troublesome when low temperature cooling water is available. The introduction of water or rubber latex direct to the batch at a certain time during the mixing is a successful practise. The large savings to be effected and numerous other advantages to be gained as compared with the use of roll mills are such as to make advisable the adoption of internal mixers wherever practicable.—P. S. Shoaff.

Cyclopentadiene Rubber. The structural relations of butadiene, alpha methyl butadiene, dimethyl butadiene and cyclopentadiene are discussed. Different methods of polymerizing the cyclopentadiene are given and the various products described. Very complete details of the chemical properties and reactions of these synthetic rubbers are given.—H. A. Bruson.

Furfural Derivatives as Rubber Accelerators. A review is given of results reported in the literature on the use of furfural derivatives as rubber accelerators. Additional work has been done on these compounds, especially hydro furamid and the thio acids. Other types of furfural derivatives are discussed.—John P. Trickey and G. J. Leuck.

Is Commercial Synthetic Rubber Probable? The synthesis of rubber divides itself into two definite operations: (1) The preparation of the hydrocarbon. (2) The polymerization of the hydrocarbon. The hydrocarbons which have been used successfully are isoprene and methyl isoprene; the latter generally known as dimethyl butadiene. The most successful method of polymerization has been the method of auto-polymerization, which is carried out by allowing the hydrocarbon to remain for approximately 90 days at a temperature of 60 degrees C. The synthetic rubber which has been produced to date has been found to be valuable in the manufacture of hard rubber goods, but it is not acceptable for soft rubber goods, due to inadequate aging.

The commercial success of synthetic rubber is dependent upon three factors: (1) Its quality must be equal essentially to that of natural crude rubber. (2) Methods of producing synthetic rubber must be developed which will give a uniform product; that is, the product must possess a uniform degree of polymerization. (3) It must be competitive in price with the natural product.

The first and second conditions will undoubtedly be met, although the second condition will be the more difficult of the two to overcome. Overcoming the third condition will simmer down to a conflict between the agricultural chemists and the botanists, working together, against the chemical synthesists. The agricultural chemists have been notably successful in devising means for increasing the yields of other plant products. If they meet with only a portion of this success in the cultivation of rubber, the chances of victory for the synthesists look slim.—L. E. Weber.

A Microscopical Method for the Demonstration of the Degree of Impregnation of Fabrics by Rubber. To facilitate the cutting of sections, the samples of coated fabric are cured to the hard rubber stage by means of calcium or potassium polysulphides. After cutting, the sections are immersed in concentrated sulphuric acid which removes the cotton fibers without appreciably attacking the rubber structure. Examination under the microscope affords a means of comparing the extent of impregnation by different processes.

Photomicrographs are shown of sections illustrating different methods of impregnating fabrics with rubber, such as: frictioning and coating, impregnation by pressure, latex impregnation, impregnation with rubber cement, electrolytic deposition of rubber from latex.—E. O. Dieterich.

The Effects of Accelerated Aging Upon the Physical Properties of Hard Rubber Compounds. For soft compounds the stress-strain curve is a satisfactory means of measuring the changes which occur in these compounds under the conditions of accelerated aging such as the Geer test. In the case of hard rubber compounds the same criterion cannot so easily be applied. By choosing different properties, such as transverse strength, impact strength and softening temperature, the effects of accelerated aging can be followed.

Hard rubber compounds were aged at 158 degrees F and 300 degrees F to determine:—(1) The effect of cure, (2) the effect of accelerators, (3) the value, in hard rubber, of age retarders that have been satisfactory in soft rubber compounds, (4) the effects of inert and of active pigments.

From the results of these experiments the following conclusions are drawn: Up to 14 days, aging at 158 degrees F produces relatively small changes in the physical properties of hard rubber compounds. At 300 degrees F the deterioration is rapid and very great. Compounds receiving the optimum cure are less affected than under cured compounds. The effect of accelerators is not very marked. Age retarders valuable in soft rubber compounds appear to have no beneficial effect in hard rubber compounds, so far as the present investigation goes. The percentage effect on heavily loaded compounds is less than on pure rubber-sulphur

compounds. The effect of aging is not an overcure, as the percentage of free sulphur remains constant.—E. O. Dieterich and Harold Gray.

High and Low Stiffening Carbon Blacks. Carbon blacks may be divided arbitrarily into two main classes. One class stiffens rubber or oils much more than an equivalent volume of ordinary zinc oxide, whereas a second class stiffens rubber or oils to approximately the same extent or in some cases even less than zinc oxide. The tensiles at the point of rupture of carbon stocks containing a member of these two classes separately, may be quite as high in one case as in the other. The elongation at break is usually much greater where the low stiffening carbon has been employed. The amount of oil necessary to wet thoroughly a given quantity of carbon is a reliable qualitative, but not an absolute quantitative measure of the stiffening power of the carbon in a rubber mix. The stiffening power of a carbon is not necessarily an index of the adsorption by the carbon of malachite green in aqueous solution, victoria blue in benzol solution or hexamethylenetetramine in benzol solution.

Observations on carbon black rubber stocks under the microscope indicate that there is a close relationship between distribution of the finest particles of the carbon in the rubber matrix and the tensile at the point of rupture. There appears to be no definite relation between the size of the particles or aggregates of carbon in the rubber mix and the stiffening power of the carbon for rubber.—Ellwood B. Spear and Robert L. Moore.

The Chemical Unsaturation of Rubber Under the Action of Heat, Trichloroacetic Acid and Mastication. Recent work on shellac and rubber is reviewed which apparently shows that the chemical reactivity is varied by physical treatment. Hydrogenation of rubber has been brought about only through the previous action of mastication and heat, and by high dilution with solvents. It was thought that some of these physical changes might also be accompanied by chemical changes. Under the action of heat there is a lowering of the chemical unsaturation, the amount depending on the time and temperature (verification of the work of Staudinger). Trichloroacetic acid not only causes a lowering of the viscosity of a rubber solution, but also of the chemical unsaturation. Mastication in air causes a lowering in the unsaturation possibly due to absorption of oxygen, but in carbon dioxide there is no change in unsaturation, although there is, of course, a decided change in the physical properties.—Harry L. Fisher and A. E. Gray.

Some Factors Influencing the Weathering of Vulcanized Rubber. The fact that vulcanized rubber in a stretched or strained condition is very susceptible to cracking or checking, especially under the influence of direct sunlight, has been utilized in an accelerated test for studying the deterioration of rubber compounds when exposed to the weather. This test has been used in determining the influence of cure, sulphur bloom, color, grade of rubber, reclaimed rubber, several filler pigments, several kinds of softeners, accelerators, and an anti-oxidant on "sun cracking."—N. A. Shepard, S. Krall, and H. L. Morris.

The Effect of Heat on Rubber. On the assumption that the breaking down of rubber was connected with the formation of a sol phase at the expense of a gel phase, a method for breaking down rubber was outlined which consists of heating rubber, with the swelling agent benzene, in a bomb to a temperature of 150 degrees C and a pressure of 84 pounds. Temperature-pressure curves indicated that the breaking down of rubber was essentially a physical change. This drastic action resulted in a marked increase in plasticity of the treated rubber, and in a distinct decrease in viscosity of the cements made from it. Cured samples showed as good a tensile as the control in which moderately milled rubber was used. The former, however, aged very rapidly in the oven. Samples of cements had a tendency to become more viscous after prolonged standing. This might have been due to a partial setting-up action.—James K. Stewart.

The Addition of Light to Accelerated Aging. A mercury vapor ultra-violet lamp (Uviarc) was inserted in a Geer aging oven, after the manner proposed by Asano, *i.e.* at 7 cm. distance from sample and at an oven temperature of 160 degrees F. Judging the destructive effect by the appearance of the samples and from a comparison of physical and chemical data obtained with other aging processes, this heat-light combination reduced the time required for destruction from a matter of days to that of hours. This work was confined solely to vulcanized rubber sulphur mixes, as these compounds have given some trouble both in the Geer oven and the Davis-Bierer bomb aging tests.

By this method cracking of the surface, hardening and coloring of the product, decrease in the physical properties and the weight of the samples, and finally an increase in the acetone extract, takes place progressively with the time of exposure. The coloring is at first a yellowing, ending in a brown shade with a purple hue. This is apparent to the eye and visibly the aging can be judged on pure rubber sulphur mixes which could not be done with the other methods of aging, except after a longer treatment. This light-heat combination tried on boot stocks, auto tops, bathing cap materials, etc., acted in many respects like the pure rubber sulphur samples.

The action of the light is photo-chemical. The reaction velocity and the temperature coefficient can be determined as soon as the light of the lamp has been reduced to a monochromatic basis. At present it is known that the acceleration is produced both by the green rays around 5,600 degrees A and by the red rays in the region of 10,000 degrees A. It is hoped that in future investigations the light action can be determined quantitatively, and incidently some light be thrown on the mechanism of vulcanization.—F. P. Jecusco.

The Oxidation of Rubber Exposed to Light. Light has been found to promote rapid oxidation of rubber. This is especially true of rubber which is under strain when subjected to light of short wave length. Under these conditions a continuous inelastic film is produced on the surface of the rubber. In the absence of oxygen light appears to have little effect. Ultra violet light causes the production of ozone which rapidly attacks strained rubber and causes cracking. These cracks assume the maximum length and depth when the rubber is stretched about 3 per cent. Higher elongation produces a greater number of smaller cracks. Surface oxidation protects the rubber from the action of ozone. Rubber articles which are exposed to the sun may be prevented from cracking by catalyzing oxidation of the surface of the rubber before exposure.—Ira Williams.

Reclaimed Rubber as a Substitute for New Rubber and Its Economic Status in the Present Controversy. The present controversy over the high price of rubber tends to ignore in its technical aspects the conditions under which reclaimed rubber may be substituted for new rubber on a quantitatively economical basis. It is possible to compound many stocks, including tire treads, with rubber and reclaim instead of with rubber alone and maintain the same quality. Where the cost of rubber and of reclaim renders such replacement economical and where the use of reclaim is not precluded because of physical or chemical requirements, the money value of a reclaim can be determined for any cost of rubber. On such a quantitative basis, it becomes possible to know when and how to use rubber and reclaim to obtain the most economical stock of the desired quality.—J. M. Bierer and C. C. Davis.

A New Mechanical Test for Rubber Insulation. Aerial use of rubber covered wire requires that the rubber insulation shall resist cutting by the conductor at points of support and shall not crack at points of extreme flexure. This paper is a preliminary report on a test as yet not fully developed, which we have endeavored to work out as a rapid routine test for numerically expressing these qualities.

In the proposed test a two-inch section of insulated wire is subjected to a uniformly increasing compressive load between parallel

steel blocks until rupture of the insulation occurs. The load at rupture is a measure of the relative ability of the insulating material to resist cutting. The thickness at rupture is related to its ability to withstand severe bending. An experimental machine designed to make such a compression test is described.—C. L. Hippensteel.

Volume Changes in Rubber Sols. The volume changes associated with the formation of some rubber sols have been measured. The change may be an expansion or contraction, depending upon the previous treatment of the rubber and the nature of the solvent. Changes of different signs may take place in one and the same solvent according to whether or not the rubber is broken down. In general the volume changes are largest at lower concentrations and at higher temperatures, and are practically independent of time.—Willis A. Gibbons and Erdley Hazell.

The Oxidation of Rubber at Various Temperatures. Pure extracted rubber has been oxidized in the form of thin films at temperatures varying from 100 to 30 degrees centigrade. The amounts of carbon dioxide, and of water vapor which are evolved during the oxidation reaction have been determined and differences have been found in the mechanism of oxidation as the temperature is changed between these limits. A tentative explanation of these differences is proposed.—Brian Mead and John C. Pope.

Rubber Spring Automobile Suspension

A new type of spring has been invented by Walter Lawson Adams, an English automotive engineer of New Haven, Connecticut. The action of the spring depends on the resilience of a rubber disk held between a fixed and a moving support. The spring device is not only employed for the suspension of automobiles on the chassis but is equally effective for bumper and shock absorbers.

The cushioning feature of the spring is supplied in each of its applications by a rubber disk of tough resilient rubber molded in special form. Its shape and proportions may be seen in Figure 1. It resembles a gear somewhat in which the teeth are placed radially on both sides rather than on the circumference of the circular body. The rubber teeth on one side mesh snugly with teeth of corresponding form in a stationary metal support serving as an anchorage. A similar toothed metal disk meshes with the rubber

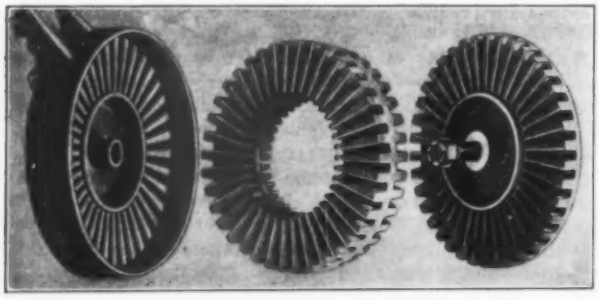


Fig. 1.—Parts of Rubber Spring Suspension

teeth on its opposite side forming the movable member of the spring. A bolt through the center of the parts holds them together while a stiff pressed-steel arm runs from the movable side of the device to the car axle.

The spring action is entirely in the rubber disk. The function of the intermeshed teeth is only to enable the two metal members to grip onto the central disk of rubber and apply to it a torsional strain. The advantage of rubber as a spring is that it has no perceptible rebound. When rubber is stretched under a strain it returns to its original size and shape when the stress is removed but does not swing beyond its normal position as a metal spring does. Figure 2 pictures the application of this simplified springless suspension to an automobile. Thus equipped it is not surprising that a Ford car rides remarkably well. Shock absorbers are in fact, not required with this non-rebound suspension.

In addition to exceptionally smooth riding due mainly to elimination of rebound the springless suspension has a number of other advantages. The spring arms act as radius rods, keeping

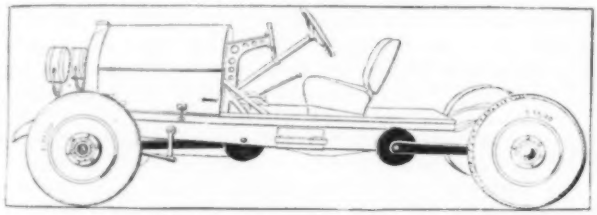


Fig. 2.—Application of the Adams Spring Suspension

the axles in correct location with reference to the frame; no lubrication is required and there are no parts to rattle; unsprung weight is reduced to a minimum, whereas with the ordinary leaf spring about three-quarters of the spring weight moves up and down with the axle, thus greatly increasing the bouncing of the wheels over the road; spring breakage is impossible.

This device has been applied to other purposes beside automobile suspensions, bumpers and shock absorbers. For example it is fitted for tipping back theater seats, on swivel chairs, and as shock eliminators in the landing gears of airplanes.

Its simplicity and rugged construction specially adapt this device for automobile service where noiseless action and durability are equally desirable.

RUBBER RELINERS FOR GRAVEL CHUTES

The abrasive resistance of rubber, when properly compounded and cured, has been strikingly demonstrated in the displacement of metal as a lining in tube mills for grinding gold quartz, portland cement and other materials difficult to pulverize. The superiority of rubber over metal is again demonstrated in its use as a lining for gravel chutes. Steel lined chutes carrying gravel from the screens to the car loading hoppers last on the average 7 days, never over 10 days, before they must be renewed. These metal liners, ¼-inch boiler sheet steel, cost approximately $30 installed

A rubber reliner, 17½ inches wide by 12 feet 3 inches long, was fastened in a chute by carriage bolts with the heads embedded in the rubber. This liner cost approximately $55. The gravel passing over the liner varied in size from ¼-inch up to 2½ inches in diameter. Had this liner lasted but one month, its proportional cost would have been only about one-half of the amount of the steel liner. As a matter of fact after 6 months' service there was no sign of wear on the rubber either around the bolt heads or on the edges where the gravel runs off, which are the points of greatest wear, yet approximately 250,000 tons of gravel had passed over the liner. It is safe to say that equivalent results are possible wherever rubber is employed to resist abrasive wear in industrial work.— *"U. S." Rubber News.*

GERMAN BICYCLE TIRES HAVE BEEN MADE FOR MANY YEARS OF white rubber and riders are still strongly prejudiced in their favor and against black tires. This is a serious matter from the point of view of German trade as well as on account of the loss to the user by his rejection of the more efficient carbon black tire. In automobile pneumatic and solid tires carbon black stocks have been introduced with beneficial effect. They will eventually be adopted for bicycle tires because of the need of saving the import expense on cotton and crude rubber of $6,400,000 annually.

What the Rubber Chemists Are Doing

Effect of Accelerators on Cure and Quality of Various Rubbers[1]

By R. P. Dinsmore and A. O. Zimmerman[2]

IT has long been recognized that certain wild rubbers have a more rapid rate of cure than others, and that, in the plantation varieties, brown crêpe is likely to be slower than pale crêpe or smoked sheets. These things, while constituting some draw-back to the promiscuous interchange of rubbers in a given formula, do not cause the rubber compounder much concern. It is a fact, however, that two different lots of the same type of rubber may vary widely as to rate of cure, and even after the cure is adjusted a difference in the physical properties, and therefore in the quality of the finished product, may exist. This produces an element of uncertainty which is a source of continuous worry to the rubber compounder.

It was the purpose of this investigation to discover whether there could be found any correlation in the properties obtained by the use of different accelerators in the same type of mix. It was desired to ascertain how much of the difference encountered could be attributed to change in the rate of cure and how much to other factors which affect only the quality. Finally, it was hoped to gain some indication regarding the variability of standard plantation rubbers.

Best Cure

The time of vulcanization at a given temperature, at which essential physical properties approach the most satisfactory balance, both with respect to each other and to their own values after aging.

Stiffness Index (S. I.)

A measure of the resistance to stretching of the rubber. (The authors originally used the term "variability index," but have adopted S. I. as being more truly descriptive of the property measured.) For pure gum and sulphur mixes this property is expressed as the increase in load necessary to change the elongation from 600 to 800 per cent. For accelerated mixes the load-increase from 500 to 700 per cent is used.

The need was recognized of distinguishing carefully between variables inherent in the rubber and those introduced by manipulation and testing. Great care was taken, therefore, to give identical treatment to all samples of rubber.

It was desired to test a number of commercially used accelerators and also a mixing in which no accelerator was introduced. It was also desired to test a number of rubbers, which were selected as being variable with one accelerator, against all the rest. In order to place the accelerators originally on the same footing, it was decided to prepare a well-blended rubber from the two common types produced by plantations—namely, smoked sheets and pale crêpe. In order to do this, rubber was selected from ten different estates, and ten bales were taken at random from a lot from each estate. Five pounds were then taken from each bale and the 5-pound samples carefully blended. Each bale was broken down separately on a mill before the 5-pound sample was taken. The standard rubbers thus obtained were designated as blended rubber, and a formula was worked out for each accelerator to give the same stiffness of the stress-strain curve at a best cure of 1 hour. In all cases, except for mercaptobenzothiazole, which was cured at 125 degrees C. (20 pounds), the standard cure was 141 degrees C. (40 pounds), and in order to expose any unforeseen testing error a large batch of rubber was mixed according to the Hex formula. This was sheeted out on a calender to the proper thickness for laboratory test, the sheets were rolled up in holland, and a sheet of this standard batch was cured with every rubber test that was made.

A qualitative comparison of the tear resistance of different test sheets was found to be readily obtainable by hand. The method is to cut the test sheet in the direction of the calender grain, and to tear the cut, thus started, for a sufficient distance to get an impression of the average resistance to tear. The same method is applied to other sheets with which the comparison is made. For example, a series of cures varying in time by 15-minute increments may be compared in this way and the cure giving maximum tear resistance easily determined.

Quantitative comparisons may be made by using a narrow strip and substituting testing machine grips for the hands. The same procedure is applied after aging. In general the cure which gives maximum tear resistance before aging will give very close to maximum after aging. This differs from any other important physical property of rubber.

Testing Criteria

It is obvious that a study of rubber variation must deal with properties which are of fundamental importance, if conclusions drawn therefrom are to be of value. It is unfortunate that there is no general agreement regarding such properties, and it is doubtless due to this fact that the practical service test holds its present dominant place in the rubber industry. It is impossible for the authors of this paper to accept the criteria for rubber which have been adopted by other investigators. It becomes needful, therefore, to justify the selection of other standards.

From the standpoint of the manufacturer of rubber goods, the properties which are important in the raw materials are those which affect the ease of manufacture and the quality of the finished product. In this paper the discussion will be limited to those properties which affect final quality. Therefore, in the testing of crude rubber to determine its value for manufactured rubber products, only those properties should be considered which are known to determine the quality of the finished article. It may be desirable to investigate other properties in an attempt to establish a relationship with the final quality. But until such a relationship is determined the use of such properties as a means for evaluating, controlling, or classifying rubbers, is useless, misleading, and, in all probability, worse than no control at all.

With this clearly in mind it will be apparent that the use of the terms "cure" and "quality" in the classification of rubbers is without significance, unless these properties are related in a known way to the properties of the finished article. Hence, the state of vulcanization or cure of any rubber tested must be the technically correct or "best" cure, which corresponds to that producing the most durable finished article, because there is no known relationship between the properties at best cure and those at other cures. Likewise, the properties selected for comparison at the best cure must be those which forecast the durability of the finished product.

---

[1] Presented before the Division of Rubber Chemistry at the 69th Meeting of the American Chemical Society, Baltimore, Maryland, April 6 to 10, 1925. From *Industrial and Engineering Chemistry*, February, 1926, 144-157.

[2] The Goodyear Tire & Rubber Co., Akron, Ohio.

[3] Sheppard and Krall, *Industrial and Engineering Chemistry*, 14, 951 (1922). Sebrell and Vogt, *Ibid*, 16, 793 (1924).

For reasons to be discussed later, the stiffness of the rubber, as shown by the stress-strain curve, and the tear resistance have been selected as the two most significant properties. The definition of best cure may now be modified to read—the time of vulcanization at a given temperature, at which stiffness and tear resistance approach the most satisfactory balance, both with respect to each other and to their own values after aging. One year's normal aging should be a satisfactory criterion for most work.

It is now necessary to explain why tear and stiffness were selected as the most important physical properties by which to determine variation. It will be sufficient in this paper to point out that in a large number of articles made from rubber the ability to resist tear, whether produced by external contact or internal shear, is of greatest importance, and the stiffness or resistance to deformation has a profound influence on the character of the rubber. These properties also fulfil the condition of being subject to variation, both by changes in cure and changes in rubber. Tensile strength is undoubtedly important, but there is a serious question whether most rubber articles, stressed to point of failure, do not fail from tear before the ultimate tensile strength is reached. It is also noteworthy that it is difficult, if not impossible, to produce a rubber compound having high tear resistance and stiffness without at the same time having high tensile.

Certain physical properties of rubber may be neglected either because they are practically constant (for a given amount of pigmentation) or because they are functions of cure. Such properties are elasticity, its reciprocal—hysteresis—and permanent set. Other properties which have been used or suggested as criteria for rubber quality are tensile strength, elongation, tensile product, energy of resilience, Schidrowitz's slope, and coefficient of vulcanization. It has already been stated that tensile is a correlative property with tear resistance and stiffness.

A fairly consistent relationship shows between tensile and S. I. when enough tests are taken to give a good average tensile. It indicates that tensile and S. I. vary in the same direction, at least in the neighborhood of the best cure. It is worth noting that a considerable number of tests are necessary to determine tensile accurately, whereas S. I. can be determined with precision on the stress-strain curve from one test. Therefore, in a sense, it is unnecessary to use tensile as a measure of quality. Used alone it is unsatisfactory, because as time of cure increases tensile increases considerably beyond the point where maximum tear resistance and best aging properties are secured. Therefore the best aging cannot be selected by the tensile figure. Moreover, rubber test specimens usually fail on account of imperfections, and therefore a number of tests are required to get a good average of tensile.

The same arguments apply to ultimate elongation, except that it decreases with cure instead of increasing.

Tensile product is a somewhat better figure, because it usually passes through a maximum at a point nearer to best cure than does tensile. Its maximum, however, is usually beyond the point where maximum tear resistance and best aging properties exist.

Energy of resilience has been shown by Wiegand to be only a measure of reënforcing effect of pigments. Different crudes and different states of cure give about the same "concavity factor"—i. e., deviation from Hooke's law. This simply means that energy of resilience is no more a sensitive index of rubber quality than tensile product, for, as Wiegand says, tensile product "exactly represents twice the energy of resilience of the sample, had it followed Hooke's law."

Schidrowitz's slope is not sufficiently sensitive to change in rubber properties. It frequently fails to indicate important differences where they exist and in the other cases indicates differences which are not important. The writers confirm the de Vries' findings that slope does not remain constant with varying cures. Their results, on the contrary, show that slope decreases with increase of time of cure, at least in the vicinity of the best cure.

Coefficient of vulcanization has been shown by other investigators[8] to be an unsatisfactory criterion.

Hence we find that if we admit stiffness and tear resistance to be important rubber variables none of the other commonly known properties is satisfactory as a criterion of quality.

Considering the diverse uses to which rubber is put, it would seem that we should be interested in the entire stress-strain curve or at least in a stiffness figure which is a good average for the entire curve. Probably, for many purposes, a direct comparison of the stress-strain curves is the most satisfactory method. However, when many comparisons are to be made, this method is awkward, and lends itself with difficulty to quantitative comparison. If stiffness is considered an essential characteristic of rubber, and it is admitted that displacement of the stress-strain curve denotes changes in stiffness, criteria suggested by other investigators are misleading and the index figure adopted by the authors is satisfactory. Needless to say, the property of stiffness was not selected by the authors upon purely theoretical considerations. Practical experience has shown it to be one of the most important of rubber properties.

Discussion of Results

One important reversal of the writers' former opinions regarding the properties of accelerated stocks is that the use of an accelerator does not necessarily make times of best cure uniform. It is true that fast and slow curing rubber as determined in a pure gum mix may give the same time of cure in an accelerated mix. In fact, it was on this account that the erroneous impression was formed that accelerated mixings are more uniform in cure than pure gum mixings. On the other hand, two rubbers giving the same time of cure for pure gum mixings may give different times of cure in accelerated mixings.

No one of the mixings selected can be used as a criterion of cure or quality for any of the rest. There is more variation due to cure than to quality exclusive of cure, but there is an important amount of variation due to quality alone. The lots of smoked sheets tested give a higher average S. I. than the pale crêpe lots. The smoked sheets are more variable from all causes than pale crêpe, also more variable in quality in the pure gum mix. On the other hand, a higher percentage of pale crêpe rubbers had best cure off-standard. On the whole, pale crêpe is more uniform than smoked sheets, but it is unfortunately uniformly low. Of the mixings used, TPG is the most uniform throughout, and Hex next.

It occurred to the writers that high and low quality might correspond with short and long times of best cure, respectively. However, there is no such relationship for smoked sheets. General survey of all the data indicates that there is a tendency for fast curing rubbers to be higher in quality than the slow curing ones. This, of course, is particularly true of pure gum.

Possible Causes for Variation

It has been shown by many investigators that the by-substances in rubber vary considerably in the proportions in which they appear. It seems probable that most, if not all, of the variations experienced in vulcanization are due to the variation in these nonrubber constituents. We know, for instance, that rubber contains natural accelerators, resin acids, and natural tannin substances. It is known that stearic acid accelerates TPG, retards DPG, and has little or no effect on Vulcone. Since stearic acid behaves much like natural resin acids, we might expect similar effects from the resin acids. It is known that tannic acid accelerates mercapto and retards DPG, also that certain accelerators react to produce more than additive vulcanization effects, both in cure and quality. We further know that most accelerators need zinc to produce the best quality, and require the presence of some acid to render the zinc soluble in the rubber. We may therefore assume that a variation in the acid content and natural accelerator content of the rubber would be quite likely to cause variation in the cure and quality of these rubbers, and the effects may well be different with different accelerators.

Conclusions

1. It is insufficient to use one, or even two or three, mixings to evaluate rubber for use with miscellaneous accelerators.
2. Adjustment of cure is the most important problem.
3. Variation in quality exclusive of cure is of real importance.
4. S. I. at best cure gives a better idea of quality changes than slope, tensile, ultimate elongation, tensile product, energy of resilience, or coefficient of vulcanization.
5. Tear resistance is an important property, particularly as a criterion for cure.
6. In order to specify rubber quality it will be necessary to specify the mixing used, until such times as the causes of variation are understood and means provided for eliminating or counteracting them.

Chemical Patents

The United States

RUBBER CEMENT. Adhesive composition comprising caoutchouc latex and furfural having the property of incorporating a suitable rubber stabilizer.—Benjamin P. Taylor, Wyoming, assignor to Taylorall, Inc., Cincinnati, both in Ohio. United States patent No. 1,566,566.

MAKING AND VULCANIZING RUBBER GOODS.—Articles are made from a number of stocks each containing a group of vulcanization agents which in proper proportion would produce vulcanization under working conditions, each containing these agents in different proportions, and in a proportion ineffective for vulcanization under the same conditions. Such stocks are united and vulcanized.—Thomas W. Miller, Ashland, Ohio. United States patent No. 1,569,662.

COLOR-BLENDING PAVEMENT-CRACK FILLER. One-half to 3 pounds crude rubber; 25 to 30 pounds rosin; 1 to 4 pounds of 37 to 40 degree Beaumé distillate oil; 0.05 to 0.5 pounds titanium dioxide; 0.1 to 1.0 pounds barium sulphate, and enough lampblack to tint to the desired color of gray.—Herman C. Helmle, assignor of one-half to Wesley C. Pruitt, both of Springfield, Illinois.—United States patent No. 1,570,219.

LINSEED OIL SUBSTITUTE. Twenty-five pounds of crude rubber; 75 pounds of kerosene solvent; 100 pounds of rosin; 4 pounds of phosphorus trichloride, and sufficient caustic soda to produce in the mixture an alkali test.—Jacob Horowitz, Brooklyn, New York. United States patent No. 1,570,252.

ATTACHING RUBBER TO METAL. The method comprises applying to the metal a thin bonding film of a relatively rapid-curing hard rubber composition, superimposed thereon a layer of relatively slow curing soft rubber composition and vulcanizing them together on the metal.—Allan B. Merrill, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y. United States patent No. 1,570,445.

ACCELERATOR. A stable molecular compound of one molecular proportion of paranitroso-alkyl-arglamine and two molecular proportions of beta-napthol. Victor Lefebure and Anthony J. Hailwood, assignors to British Dyestuffs Corporation, Limited, all in Manchester, England. United States patent No. 1,570,752.

HARD RESINOUS VULCANIZATION ACCELERATOR. A rubber vulcanization accelerator formed by the action of formaldehyde on the condensation product of 3 moles of acetaldehyde and 2 moles of aniline.—Winfield Scott, assignor to E. I. duPont de Nemours & Co., both of Wilmington, Delaware. United States patent No. 1,571,739.

The United Kingdom

RUBBER LATEX COMPOSITIONS. A paste which can be mixed with cements, concretes, mortars, etc., for strengthening or water-proofing purposes consists of raw or vulcanized rubber latex, a preservative such as hexamine, silicate of soda, potash soap, and water, with or without a stiffening agent such as gum arabic.—S. M. Kirkpatrick, 3 Broomhill avenue, Glasgow. British patent 242,345.

VULCANIZING RUBBER. Rubber vulcanized by means of sulphides of phosphorus is subjected to an after treatment with ammonia, either as gas or in solution.—S. J. Peachey, 44 Platt Lane, Hampstead, London. British patent, No. 242,464.

COATED FABRICS. A fabric having a surface resembling that of finely tanned skin is obtained by impregnating the textile with a solution of rubber in benzol or other solvent to which talc or oxide of magnesium, aluminum or zinc has been added, treating the impregnated product with alcohol and subjecting it to pressure, grinding and polishing.—H. F. V. Meurling, Villa Vindkulla, Helsingborg, Sweden. British patent No. 242,537.

BATTERY BOX COMPOSITION. This consists of 11 pounds 9¼ ounces of crêpe rubber; 3 ounces of paraffin wax; 5 pounds 5½ ounces of sulphur; 18 pounds 5 ounces of ebonite dust; and 0.5 per cent of an accelerator. On this layer is applied one consisting of 20 pounds of crêpe rubber and 2 pounds of sulphur and over this an outer layer of the first composition. The whole being then subjected to pressure and heat for vulcanizing.—W. A. M. Valon, West Hill, Hessle, Yorkshire, and Paragon Rubber Manufacturing Co., Ltd., 447 Wincolmlee, Sculcoates, Hull. British patent No. 242,687.

COLORING RUBBER. In the manufacture of dipped rubber articles, a bath with a colored patterned upper layer is employed whereby on withdrawing the article from the bath a surface mottling or marbling is produced. The colors may be given any desired arrangement, and the solvent may be of lower specific gravity than that of the bath to minimize mixing. For thick articles the last dip only is made in this bath. A gloss is imparted by a final dip in transparent solution.—Gummiwaren-Fabrik, M. Steinberg, Dürenerstrasse, Lindenthal, Cologne, Germany. British patent No. 242,900.

MATCHES. The heads or stems of matches are rendered water-proof by the incorporation of or coating with vulcanized rubber latex or emulsion.—M. M. Dessau, 14 Mincing Lane, London. British patent No. 243,047.

RUBBER COMPOSITION INGREDIENT.* A compounding ingredient consisting of the residue obtained by distilling coal tar until a large proportion of the volatile constituents is removed and the residue contains about 60 per cent of free carbon, and has a melting point of 350 to 400 degrees F., and a specific gravity of 1.30 to 1.35. This residue is ground to pass through a 200 mesh, and is milled into the rubber in the usual way.—Barrett Co., 40 Rector street, New York, N. Y. British patent No. 243,384.

PAVING MATERIALS. In a paving material for tennis courts, etc., composed of mineral ingredients, various binding materials may be used such as resinous, oily or bituminous matters, rubber, rubber latex, etc., are named as suitable for this purpose. As an example 20 gallons of rubber latex may be used per ton of granular material.—C. E. Foley, Foley Chemical Works, Fenton, Stoke-on-Trent. British patent No. 243,418.

COLORING RUBBER. Sponge rubber having fine pores is ornamented by spraying it with colored latex, solutions or emulsions of rubber.—H. Lindemann, 20 Dovenfleth, Hamburg, Germany. British patent No. 243,605.

* Not yet accepted.

New Zealand

RUBBER CEMENT. Adhesive composition comprising caoutchouc per ed additional substances into dispersions, especially into rubber latex, or into goods produced directly from the dispersions in which the additions are made.—The Anode Rubber Co., Ltd., 15 Throgmorton avenue, London. New Zealand patent No. 55,037.

RUBBER FOOTWEAR MANUFACTURE AND COMPOSITIONS. Typical composition comprises 100 parts of crude rubber, 80 parts of carbon or gas black, 4 parts of pine tar, and 10 parts of toluol, with or without the addition of 5 parts of sulphur, and 5 parts of litharge.—William B. Wiegand, Kitchener, Ontario, Canada. New Zealand patent No. 55,039.

Germany

423,816 (January 30, 1925). Method for applying luminous masses to objects of rubber, particularly soft rubber. Konrad George Baur, New York; John Goldschmidt, Neuenburgerstrasse 4, and Dr. Kurt Arndt, Spreestrasse 5, Charlottenburg. Represented by Dr. F. Warschauer, Berlin S. W. 61.

423,971 (October 2, 1924). Method of vulcanizing rubber. Guiseppe Bruni, Milan, Italy. Represented by B. Wassermann, Berlin S. W. 68.

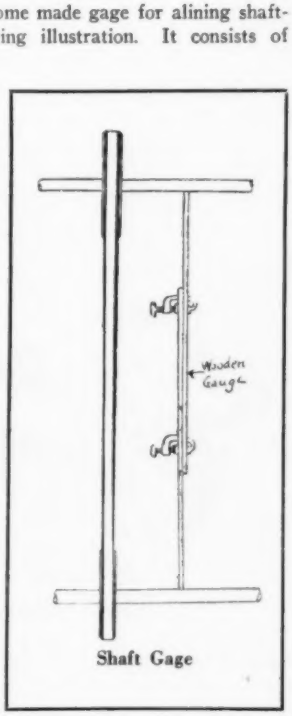
424,280 (November 16, 1923). Method and apparatus for concentrating rubber latex. General Rubber Co., New York. Represented by R. H. Korn, Berlin S. W. 11.

424,281 (February 24, 1923). Method of hydrating natural and artificial rubber. Siemens & Halske A.-G., Berlin-Siemensstadt.

HANDY SHAFT ALINING GAGE

By W. F. Schaphorst

An excellent and inexpensive home made gage for alining shafting is shown in the accompanying illustration. It consists of two light, stiff, wooden pieces, and two clamps. With this gage, clamped to the correct length, it is a very simple matter to check up two shafts and learn whether or not they are parallel. If they need alining the gage will touch only at the points of minimum distance. Thus if the shafts are not parallel the distance between them will not be the same along the entire length, but if the shafts are parallel, the gage will just touch at both ends at every place of measurement.



Shaft Gage

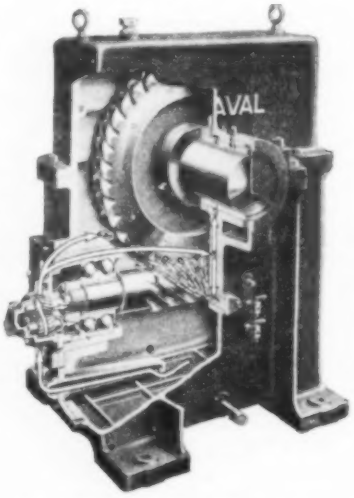
In most any plant where much shafting is used it is worth while to make a gage of this kind to keep on hand for use as a permanent tool. Fitted with a tongue and groove joint the two pieces are adjusted more quickly than without such a joint. However, two plain sticks without the grooved joint will serve the purpose very well in an emergency.

New Machines and Appliances

Positive Oiling for Worm Reduction Gears

For high speeds or for the transmission of high powers the pressure or forced feed oiling system for worm reduction gears here pictured provides positive lubrication.

The oil is drawn through a large bronze strainer located at some distance above the bottom of the oil reservoir by a pump which delivers it through passages in the casing to spray nozzles located on both sides of the worm, and also to all bearings. The oil passages are so arranged that they can easily be cleaned and the oil spray nozzles can be taken out without disturbing piping. When desirable, an oil cooler can be connected into the system. The oil pressure is maintained constant by an automatic relief valve, irrespective of the speed of the drive.

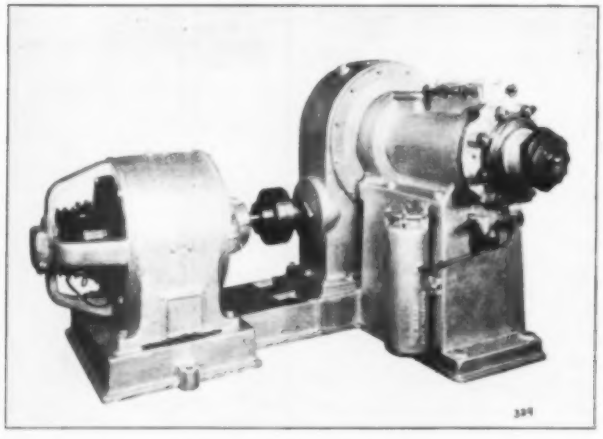


De Laval Pressure Oiling System

The supplying of oil by pumping rather than by splashing eliminates excessive heating through churning of the oil by high speed worms, avoids foaming of the oil due to such churning and insures a continuous, positive feed to all points requiring oil.—De Laval Steam Turbine Co., Trenton, New Jersey.

Worm Driven Inner Tube Machine

Pure gum inner tubes can be extruded successfully on the machine here illustrated. It is a 6-inch worm driven tuber with head specially designed for making inner tubes. Some of the special features of this machine are the following. It is much more compact than the old type of spur gear tuber. The feed screw is cut from a solid steel forging and is ground, polished, bored and counter bored for water circulation. The cylinder is fitted with a renewable bushing which can be taken out without disturbing the balance of the machine.



Allen Tuber for Inner Tubes

The spider is constructed with elliptical shaped arms to avoid forming any channels in the stock after passing through the die. The head holds an ample supply of stock which is directed through the die by a cored guide through which soapstone can be sprayed into the interior of the tube as formed.—Allen Machine Co., Erie, Pennsylvania.

Cement Mixer

The mixer here pictured differs advantageously from the usual cement churn or mixer. The tank is well built of steel plate with reenforced bottom and an angle around the top. The agitator drive is mounted on heavy steel cross members. The drive consists of a heavy rigid one piece cast frame and supports the gears and bearings in perfect alinement. The weight of the stirrer shaft and stirrer is carried on the top bearing which is provided with a ball thrust arrangement fully enclosed. This construction eliminates the necessity for a step at the bottom of the tank. Hinged on tight covers may be used as desired. The latter are specially suitable in the case of using volatile solvents. The outlet cocks are of the quick opening gate variety for thick materials such as rubber cement.—The Patterson Foundry & Machine Co., East Liverpool, Ohio.

Patterson Cement Mixer

Sealed Sleeve Motor Bearings

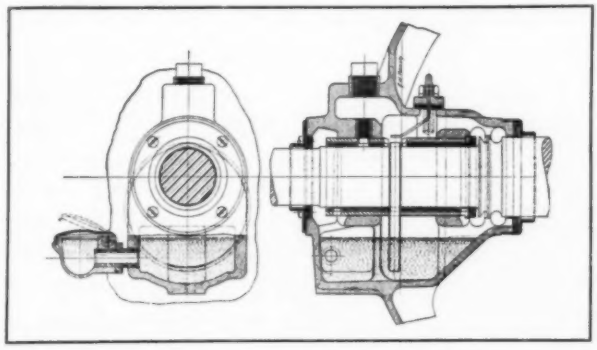
In the rubber industry, synchronous motor drive for rubber mills has been made safe by the direct application of the Westinghouse system of dynamic braking to effect emergency stops. The perfection of the sealed sleeve bearing is the most recent example of the spirit of progressiveness, correct basic engineering and the ability to gage exactly the requirements of industry. The object of the sealed sleeve bearing is to protect the motor winding from oil and exclude dust from the bearing and thus prolong the usefulness of the motor.

The construction by which these objects are accomplished is shown in the sections here illustrated. The bearing is so built that the air pressures within the bearing housing are balanced, thus preventing air from entering and oil from leaking out. The cover that closes the opening through which the oil ring is admitted is located on the inside end of the housing. This permits bolting down the cover and compressing the packing under it. A large and easily removed pipe plug on the outside end of the housing allows ready inspection of the oil ring.

For the purpose of dust proofing the housing, soft felt washers are placed at both ends. The motor shaft floats on a film of oil

and there is no oil throwing by the bearing when in operation.

The success of these motor bearings is indicated by an instance where no oil was added to the motors for 2 years after their installation. Oil troubles on heavy duty motors have been eliminated by the improved type of sleeve bearing, considerable repair expense from the failure of oil soaked windings has been saved and



Westinghouse Sleeve Bearing for Motors

maintenance cost for cleaning and washing the windings of the motors has been much reduced.—Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pennsylvania.

Improved Rubber Strainer

Tubing machine strainer heads for removing mechanical impurities from reclaims and factory rubber mixings are familiar and useful equipment. While the ordinary 3-way outlet strainer is conspicuous for its large volume production this type is now surpassed in efficiency by the two types here pictured in detail. These represent the latest development embodying the balanced design of machine for forcing stock through a convenient form of strainer. Either style machine may be worm gear driven or spur gear driven as preferred. In either case the machine is carefully designed as to driving parts, hopper feed inlet, heat regulation, etc.

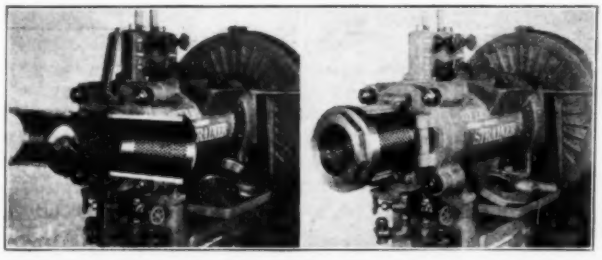


Fig. 1. Left—Cleaning Position. Right—Working Position of Divided Sleeve Strainer

A feature of special interest is the design and operation of the strainer heads. These are of two distinct patterns. That pictured at the left in Figure 1 has the outer perforated sleeve divided longitudinally and hinged so that the two parts can be swung back from the screw for cleaning while Figure 2 represents the outer sleeve as undivided and detachable from the strainer head for cleaning.

Referring to Figure 1, the inner, coarse perforated sleeve next to the screw is securely attached in the head. About this is wrapped the wire gauze against which the hinged halves of the outer, and finer perforated, sleeve close snuggly, being held together above and below by hinged steel clips folded against the line of division. The ends of these clips are secured under a heavy nut which screws on the end of the divided sleeve, holding at the same time a perforated circular plate supporting a wire gauze circle and completing the end delivery of the strainer. The closed head complete and ready for operation is also seen in Figure 1 at the right.

In Figure 2, on the left is pictured the parts of the strainer in which the outer perforated sleeve is in one piece. As in the case of the strainer above described the inner perforated sleeve, around which the gauze is wrapped, is fastened in the head. This being done, the outer sleeve is slipped into place over it and is locked by the lugs on its inner end which are engaged by corresponding lugs on a ring which is moved by rack and pinion from the outside. The end perforated plate supports the circle of gauze on the end of the outer sleeve and is held in place by a nut. Figure 2, on the right, shows this form of strainer complete, ready for use.

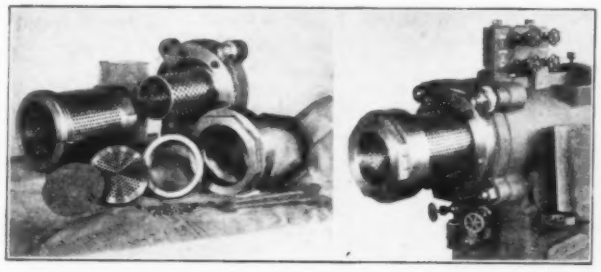


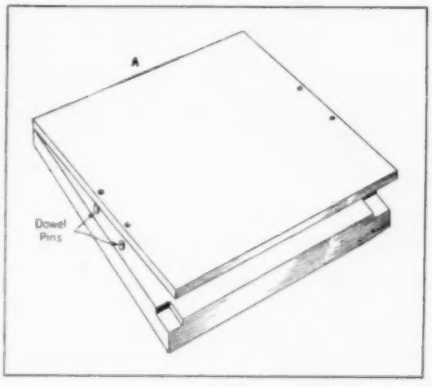
Fig. 2 Left—Unassembled Parts. Right—Working Position of Undivided Sleeve Strainer

The operation of opening either head for cleaning and changing gauze is very simple and easily done. First the nut holding the end plate is removed and in the case of the divided sleeve, the top and bottom clips are turned back and the sides of the sleeve separated.

In the case of the undivided sleeve it is only necessary to move the rack on the head with a wrench, provided for the purpose, which releases the interlocking lugs. Then a few turns of the screw in the machine forces the outer sleeve off. Aside from the perfection of detail in the design of these two machines, and the ease of their operation, the complete utilization of straining area should be noted. This permits the maximum capacity.—John Royle & Sons, Paterson, New Jersey.

A New Type of Rubber Mold

Experience has shown that the usual practise of placing dowel pins in the corners of a mold can be improved upon by relocating them as shown in the illustration. This new arrangement facilitates opening the mold by avoiding jamming The reason is that the back edge A of the mold plate serves as a fulcrum about which the top plate hinges when the mold is opened. If this fulcrum is at a proper distance from the dowels the plate will lift clear of the pins when the mold is separated by the prying irons, and the mold will remain in good order for years.—United States Tool & Machine Works, 27 Thames street, New York, N. Y.



U. S. T. & M. Mold

Magnetic Counter

Counters are desirable machinery attachments for measurement of speed and product and have many uses in rubber manufacturing plants. The new magnetic counter here represented will count up to 600 per minute, and is furnished for any voltage from 6 to 220. It is operated by electro-magnets and works satisfactorily only with direct current. Dry cells, storage battery or generated current of proper voltage will operate the counter. The instrument may be placed at some distance from the machine on which the count is to be taken; and is desirable where articles to be counted are very small, thin, or light in weight, making it difficult to count by mechanical means.

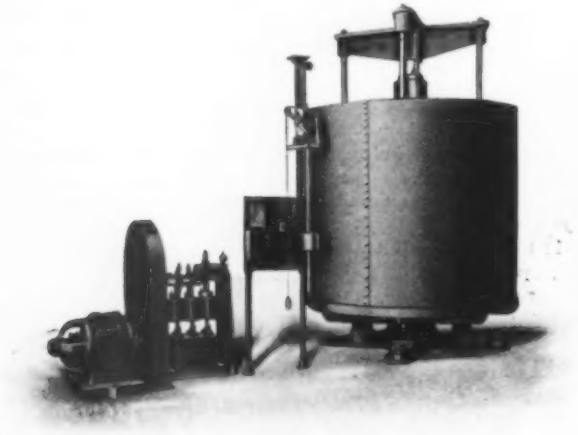
Veeder Magnetic Counter

It is necessary to provide some mechanical device which will properly close and break the electrical circuit which operates the counter. These may be of either the "wipe" or "touch" types of different forms. Its style, design, etc., will depend on the special conditions of use.—The Veeder Manufacturing Co., Hartford, Connecticut.

Electrically Controlled Accumulator

The accumulator here illustrated is of the moving-ram type. It is like the weight type accumulator except that the bottom weight plate is circular and carries an inner and outer shell which form a circular tank in which any loose weighting material can be placed. The particular feature of the machine is its automatic electric control. The picture shows a motor driven triplex pump with an electric stop and start mechanism which operates as follows:

When the tank is raised to any predetermined height the weight which holds the control switch is lifted and a smaller weight throws



Farrel Tank-Type Accumulator and Pump

the switch off. When the tank falls, the small platform or projection, which carries the larger weight and is fastened to the moving shell of the accumulator, drops and allows the heavier weight to overcome the smaller weight, thus throwing the switch on and starting the motor.

In case this switch fails to function from any cause, a limit switch, shown above the main switch, can be set at any convenient point so that, when the tank rises to a dangerous point, this limit switch is opened and the motor stopped.—Farrel Foundry & Machine Co., Ansonia, Connecticut.

Process Patents

The United States

1,570,128 Making water bags. Howard G. Carter, Detroit, Michigan.

Dominion of Canada

257,049 Baseball centers. The A. J. Reach Co., Philadelphia, Pennsylvania, assignee of Milton B. Reach, Springfield, Massachusetts, both in U. S. A.

257,128 Shoe sole. David Adelbert Cutler, Quincy, Massachusetts, U. S. A.

257,194 Rubber flooring. James Herbert Stedman, Braintree, Massachusetts, U. S. A.

257,205 Embedding cord in rubber. Herbert N. Wayne, Los Angeles, California, U. S. A.

257,211 Wrapping a tire. The Ajax Rubber Co., Inc., New York, N. Y., assignee of George Edward Shipway, Noroton, Connecticut, and Frederic Mahlon Hoblitt, New York, N. Y., all in U. S. A.

257,266 Making hollow articles. The Paramount International Rubber Co. of Canada, Ltd., Montreal, Quebec, assignee of Albert H. Bates, Trustee, Shaker Heights, Ohio, assignee of Fred T. Roberts, Yonkers, New York, both in U. S. A.

257,466 Making tire carcasses. The Yoder-Morris Co., assignee of Howard I. Morris, both of Cleveland, Ohio, U. S. A.

257,723 Rubber articles. Morland Micholl Dessau, London, England.

The United Kingdom

242,405 Driving belts. R. D. Boyce, 1, Caledonian Road, London.

242,542 Elastic threads and cords and webs made therefrom. Clutsom & Kemp, Ltd., and C. Clutsom, Highfields Factory, Highfield Road, Highfields, Coalville, Leicestershire.

242,579 Connecting uppers to insoles and soles of boots. A. F. Ward, Paxton Shoe Works, Paxton Road, Tottenham, London.

242,581 Connecting uppers to insoles and soles of boots. A. R. Chapman, Gordon Cottage, Biggar, Lanarkshire.

243,016* Concentrating latex. K. D. P., Ltd., 7, Gracechurch street, London.

243,085 Ornamenting rubber. Sir H. W. Trickett, Ltd., and A. Ashworth, Gaghills Mills, Waterfoot, Lancashire.

* Not yet accepted.

Germany

423,932 (February 7, 1924). Method of making ornamental sheet. Firma Dr. Heinrich Traun & Söhne, vormals Harburger Gummi-Kamm Co., Hamburg.

NOISE AND VIBRATION ABSORBER

In buildings in which industrial and commercial enterprises are conducted the elimination of vibrations and noises is absolutely necessary. The use of an isolating material also benefits the equipment itself by prolonging its life and foundations. Pure natural cork as it is taken from the bark of the cork oak possesses the necessary qualities of the ideal isolating material to a greater degree than any other material. Built up plates of natural cork locked by compression in special steel base plates are known as "Korfund." The cork used in these plates is treated to preserve it from decay with a non-volatile heavy oil from the highest boiling distillate of coal tar to preserve the normal degree of moisture which is vital to cork. Placed under rubber mills, calenders, etc., these cork plates effectively silence noise and absorb destructive vibrations.—The Korfund Co., 11 Waverly Place, New York, N. Y.

ACTIVITIES OF TOLEDO SCALE CO.

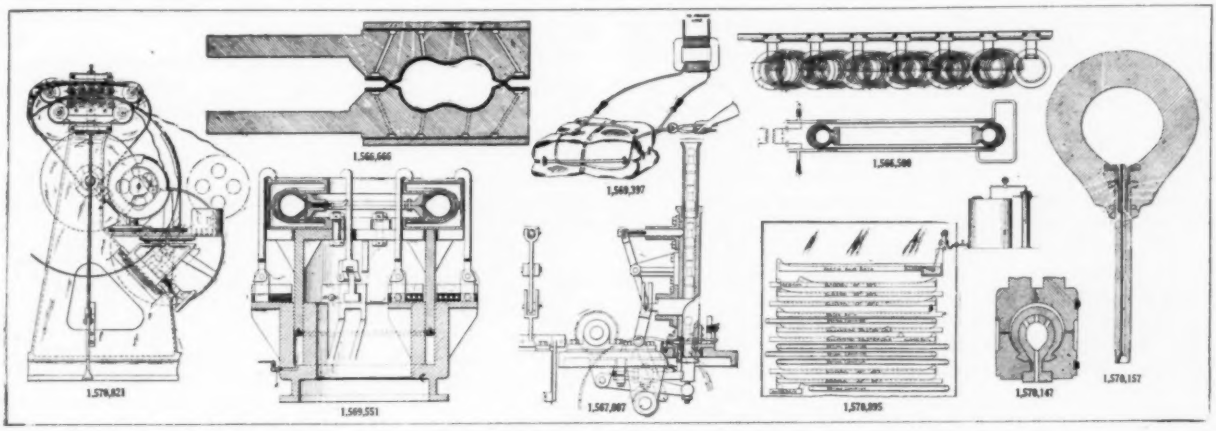
A controlling interest in the Toledo Scale Co., Toledo, Ohio, has been acquired by Hubert D. Bennett, who has also been recently elected president of the organization. Other changes in executive personnel include the appointment of O. C. Reeves as first vice-president, and W. C. Gookin as second vice-president. These two officials served formerly as general factory superintendent and general sales manager respectively.

The Toledo Scale Co., organized in 1901 for the purpose of manufacturing a special type of computing scale, has greatly extended its activities in recent years, a factory now being maintained in Canada, while under a license from the Toledo organization the product is also being manufactured in the British Isles. The past year is said to have been a most successful one, the company securing a substantial increase in volume of sales.

Machinery Patents

The United States

1,566,500. INDUCTION HEATER FOR TIRE MOLDS. Tires mounted on metal cores and encased in molds are raised to the vulcanizing temperature by a heating system comprising two sets of parallel staggered coils of piping electrically heated. The coils are placed to form close contact with the flat sides of the molds, which pass between them by these is a water bath, and beneath this a drying conveyer. Directly below the latter are placed 2 troughs containing cold vulcanizing solution, and at the end of the lowermost of these is an alcohol bath. Next below are 3 drying conveyers, and directly beneath the last of the drying conveyers are 2 glycerol baths. At the extreme bottom are a water bath and a drying conveyer from which can be discharged finished vulcanized tubing in continuous lengths by properly controlling the speed of the passage of the product by the conveyers.—Ernest Hopkinson, New York, and Willis A. Gibbons, Little Neck, New York, assignors to Revere Rubber Co., Chelsea, Massachusetts.



overhead trolley. The coil piping also forms a condenser system through which water is circulated.—Edward F. Northrup, Princeton, assignor to Ajax Electro-Thermic Corporation, Trenton, both in New Jersey.

1,566,666. APPARATUS FOR MAKING INNER-TUBES. A pair of annular mold sections with an annular cavity bordered by inclined surfaces with comparatively sharp cutting edges and with conduits extending through the mold section to the cavity for the purpose of shaping a rubber sheet into the cavity when supported against it by a clamping frame.—Allen H. Frost and Charles F. Fenlason, Jr., both of Malone, New York.

1,567,007. MACHINE FOR STRIPPING RUBBER FROM METAL FORMS. A magazine receives nipples on its forms and automatically discharges them singly below, where they are gripped by jaws. At the same time the beveled mouth of the air tube engages at a point between the form and the nipple, thus admitting air pressure between the nipple and its form, expanding the nipple and freeing it from the form.—Paul A. Raiche, assignor to Davol Rubber Co., both of Providence, Rhode Island.

1,569,397. REMOVING METALLIC STRIPS FROM BALES. This invention is designed for use in removing the iron bands from bales of crude rubber in which they have become embedded by heat and pressure. The band is electrically heated by electrodes provided with insulated handles. One of the bands is severed at a convenient point, and the end held by insulated pliers while the electrodes are applied to the severed ends. The current heats and softens the band sufficiently to allow it to be pulled away from the rubber wherever it adheres or is embedded.—Isaac W. Robertson, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,569,551. TIRE VULCANIZER. The apparatus comprises a standard or bed with an annular groove or chamber in which is slidably mounted a ring-shaped ram, the top surface of which supports a table to which is secured the lower section of a tire mold. The mold is secured to the table by several bolts passing through holes in the web formed around the central opening of the mold, and making the mold easily replaceable by others of different sizes. The upper section of the mold is hinged to the lower by a hinge bolt through a lug. The mold is held closed against the pressure of the ram by hinged clamping bolts placed around its inside and outside diameters.—Otto J. Kuhlke, assignor to The Kuhlke Machine Co., both of Akron, Ohio.

1,570,147. TIRE MOLD. This tire mold is provided with air vents around the tread circumference and half way up the side walls. Packing flanges are provided for segregation of the tread and side wall vents when the molds are stacked in a vulcanizer for a cure.—D. E. Hennessy, Milwaukee, Wisconsin, assignor by mesne assignments to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,570,157. VALVED AIR BAG. The body of the air bag is hollow and flexible and has cured into it a specially flanged metallic tube and air valve for inflating and holding the bag under pressure during the curing of the tire. The anchoring of the valve stem and cap in the body of the air bag reduces the separation of the stem and increases the life of the bag.—Christopher B. Knepper, Akron, Ohio.

1,570,821. MACHINE FOR BEAD CABLES. This machine makes endless circular cables for tire beads. This is accomplished by applying a spirally formed covering wire which is wrapped about the grommet a number of times until the bead is completely built up of spiral convolutions. The outer wire is crimped or spiralled previous to its assembly upon the spool or carrier from which it passes to the bead. In order to wrap the prepared spiral wire about the core wire without twisting the core it is necessary to pass the spool about the bead so that the usual planetary movement is avoided and the axis is maintained perpendicular to the plane of the bead at all times.—Frank H. Beyea, assignor to John R. Gammeter, both of Akron, Ohio.

1,570,895. APPARATUS FOR MAKING RUBBER ARTICLES DIRECT FROM LATEX. This is a method of manufacturing tubular articles direct from solutions and suspensions of rubber latex. The apparatus comprises a latex storage tank connected to discharge the latex as a tubular stream into a coagulating bath simultaneously forming within the tubular stream a core of a coagulating material and recovering a tubular body of rubber continuous with the stream. This is accomplished by passing the product through a series of superposed troughs enclosed in a chamber. Latex from the supply tank is delivered by an air injector through the delivery pipe nozzle into the topmost or acetic acid trough. The 3 troughs next below contain glycerol at varying temperatures. Below

1,570,298 Method and means for repairing tire casings. Albert H. Fisher, East Cleveland, Ohio, assignor of one half to Milan R. Forkapa.

1,570,665 Cutting machine. James W. Dixon, Chicago, Illinois, assignor by mesne assignments to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,571,193 Mold for curing inner tubes. Michael A. Flynn, Akron, Ohio.

1,571,376 Tire spreading tool. John F. Rogers, Dayton, Ohio.

1,571,599 Platen for vulcanizing presses. J. Frank North, assignor to Farrel Foundry & Machine Co., both of Ansonia, Connecticut.

The Dominion of Canada

257,017 Vulcanizing apparatus. The Fisk Rubber Co., Chicopee Falls, Massachusetts, assignee of Daniel Edward Hennessy, Milwaukee, Wisconsin, both in U. S. A.

257,018 Tire building machine. The Fisk Rubber Co., Chicopee Falls, Massachusetts, assignee of George F. Wikle, Milwaukee, Wisconsin, both in U. S. A.

257,022 Heel washer stacking machine. The Goodyear Tire & Rubber Co., assignee of George G. Andrews, both of Akron, Ohio, U. S. A.

257,034 Tire mold. The Lambert Tire & Rubber Co., Barberton, Ohio, assignee of Henry M. Lambert, Portland, Oregon, both in U. S. A.

257,092 Appliance for testing the viscosity of fluids. Anthony George Maldon Michell, assignee of Richard Gardiner Casey, both of Melbourne, Victoria, Australia.

257,093 Machine for making tire carcasses. The Yoder Morris Co., assignee of Howard I. Morris, both of Cleveland, Ohio, U. S. A.

257,246 Tire finishing machine. The Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ontario, assignee of Edward D. Putt, Akron, Ohio, U. S. A.

257,371 Repair device for pneumatic tires. Alvah A. Peck, Underwood, North Dakota, U. S. A.

257,646 Collapsible core. The Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ontario, assignee of William C. Stevens, Akron, Ohio, U. S. A.

257,823 Fabric treating machine. The Goodyear Tire & Rubber Co., Akron, Ohio, assignee of Charles W. Young, Goodyear, Connecticut, both in U.S. A.

The United Kingdom

242,403 Linear dimension gages. Dunlop Rubber Co., Ltd., 1, Albany street, Regent's Park, London, and C. Macbeth and W. J. Dexter, Fort Dunlop, Erdington, Birmingham.

242,870 Mold for cushion tires. H. M. Lambert, 102 2nd street, Portland, Oregon, U. S. A.

243,436 Trimmer for boots. British United Shoe Machinery Co., Ltd., Union Works, Belgrave Road, Leicester (United Shoe Machinery Corporation, 205 Lincoln street, Boston, Massachusetts, U. S. A.).

Germany

423,826 (February 19, 1924). Press for molding objects of rubber, artificial horn or similar plastic masses. Kurt Honsberg, Boschetsciederstrasse 108, Munich.

424,108 (February 29, 1924). Hydraulic vulcanizing press. Willy Welter, Bernburgerstrasse 14, Halle, a. d. S.

The Editor's Book Table

Book Reviews

"PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR TESTING MATERIALS," Volume 25, 1925. Parts I and II. American Society for Testing Materials, 1315 Spruce street, Philadelphia, Pennsylvania. Cloth, 5¼ by 9 inches. Illustrated. Part I, 962 pages; Part II, 454 pages.

PART I of this annual volume embraces the annual address by the president of the Society, the annual report of the executive committee and reports by the regular divisional committees on tentative and standard methods of tests and revisions. Of special interest to the rubber industry are the reports on methods for testing insulating materials and textiles.

Part II is devoted entirely to technical papers read before the Society. These are grouped under Metals: Cement, Concrete, Gypsum and Brick; Bituminous Materials: Paint, Textiles and Specifications. The chapter on textiles comprises a paper by G. B. Haven of special value and interest on "The Design of a Research Laboratory for a Textile Manufacturing Plant." This covers the general design and plan of arrangement of a textile and chemical laboratory, illustrated from actual installations by the author

New Trade Publications

SOME INTERESTING AND IMPORTANT DATA APPEAR IN AN illustrated bulletin sent out by the Taylor Instrument Co., Rochester, New York, in commemoration of the organization's seventy-fifth anniversary. The company specializes in temperature instruments for every purpose.

"BULLETIN No. 2, VULCONE A SYNTHETIC RESIN." THIS 11 page bulletin, adapted for loose leaf binding, is issued by E. I. du Pont de Nemours & Co., Wilmington, Delaware. It covers the preparation, properties and compounding characteristics and efficiency of Vulcone or du Pont Accelerator No. 19, which finds application in both hard and soft rubber work.

"MEASUREMENTS OF QUALITY OF FACTICE," A BOOKLET OF 21 pages with illustration and graph is issued by The Stamford Rubber Supply Co., Stamford, Connecticut. It treats of factice from the analytic point of view, giving details of laboratory tests and concluding with practical recommendations for the determination of the acetone soluble portion of factice.

THE COLUMBIA TIRE CORPORATION, COLUMBIA BOULEVARD AND Mississippi avenue, Portland, Oregon, is now sending out a monthly house organ, entitled "C-T-C Mixing Mill."

THE FOLLOWING HOUSE ORGANS, RECENTLY RECEIVED, CONTAIN interesting items: The Firestone Non-Skid, published by the Firestone Tire & Rubber Co., Akron, Ohio; The Dunlop Merchant News, the Dunlop Tire & Rubber Co., Buffalo, New York; The Mohawk Messenger, the Mohawk Rubber Co., Akron, Ohio; and The Wingfoot Clan, the Goodyear Tire & Rubber Co., Akron, Ohio.

Abstracts of Recent Articles

SODIUM SILICO-FLUORIDE AS A COAGULANT. If sodium silicofluoride can be used as a combined coagulant and mold preventative, it is reasonable to suppose that smoking rubber becoming unnecessary, it will eventually be abandoned, and factory technique be simplified by the elimination of the smoke house and unsmoked sheet be reintroduced as a standard quality which will be intrinsically better rubber than the present smoked sheet.—P. J. B., *Bulletin Rubber Growers' Association*, January, 1926, 33-36.

COAGULATION AND MOLD PREVENTION OF SMOKED SHEET RUBBER.—H. P. Stevens, *Bulletin Rubber Growers' Association*, January, 1926, 36-40.

ACID RESISTANT LININGS. An account of the method of applying and curing acid resisting rubber linings in tanks, pipes, etc.—*Gummi-Zeitung*, 39, No. 41-1681.

THE VULKACIT-BAYER RANGE OF ACCELERATORS.—*India Rubber Journal*, January 16, 23 and 30, 1926, 103, 149, and 191-192.

THE PRODUCTION OF SURFACE EFFECTS ON RUBBERED FABRICS.—*Gummi-Zeitung*, 39, No. 24, 791, English translation. *India Rubber Journal*, January 30, 1926, 185-187. Illustrated.

PRODUCTION OF ACETONE AND BUTYL ALCOHOL. Alleged infringement of a patent.—*India Rubber Journal*, January 30, 1926, 193-194.

VULCANIZED LATEX. Aging properties, durability of proofings and commercial development.—Phillip Schidrowitz, *Rubber Age*, (London), February, 1926, 567-568. Abstract.

GAS BLACK: ITS EFFECTS AND DETECTION. The nature of the grit found in gas black. The effect of milling on the grit and of the grit on tensile properties.—G. Gallie, *Rubber Age* (London), February, 1926, 569. Abstract.

TENSILE OF COLD CURED RUBBER.—Albert Zeitler, *Rubber Age* (London), February, 1926, 569-570. Abstract.

CALENDER AND CREEP-EFFECT IN UNVULCANIZED RUBBER. When stressed in the direction of calender grain rubber shows a steady increase in load with increase in stretch. Across the grain or in rubber without grain the load remains approximately constant over a considerable increase in extension. Previous heating or prolonged mechanical working reduces the extent of development of grain; subsequent heating also causes the effect to disappear. Rubber sheet with calender grain is doubly refractive and dichroic, and exhibits a distinct Debye-Scherrer diagram; its specific gravity is higher than normal, and it tends to become hard and brittle. The degree of creep shows no simple relation to the extent of calender grain, whereas the latter is probably associated with the development of a definite orientation of the rubber particles with perhaps partial crystallization. Gutta and balata can exhibit marked calender grain; Castilloa rubber and Hevea rubber are comparable in behavior but with Ficus rubber the effect is only weak.—W. de Visser, *Gummi-Zeitung*, 1925, 40, 457-458, 511-513.

DETERMINATION OF RUBBER AND INORGANIC MATERIALS IN SOFT RUBBER GOODS.—R. T. Mease and N. P. Hanna, *Kunstoffe*, 15, 177-178, 1925.

A TWO PHASE STRUCTURE OF RUBBER. A general review.—E. A. Hauser. *Revue Générale des Colloides*, 1925, 3, 289-293, 321-324.

RUBBER AND THE RUBBER INDUSTRY.—J. C. Bongrand, *Chimie & Industrie*, 1925, 14, 823-838.

NEW RUBBER SOFTENERS. Solval is more effective as a rubber softener and for increasing tackiness than the esters of the higher alcohols and the sulphur addition products of terpenes. Rubber may be dispersed on the rolls with Solval and then dissolved in organic rubber solvents, or it may be added to the rubber solution. Hexalin and Heptalin give similar effects to that of Solval and are employed in the same manner.—Dr. Rudolph Ditmar, *Gummi-Zeitung*, October 9, 1925, 94.

RUBBER SPONGES. I. Serial article.—André Dubosc, *Le Caoutchouc & la Gutta Percha*, January 15, 1926, 12,979-12,980.

ELASTICITY HYSTERESIS AND ITS IMPORTANCE IN THE COLLOID-STRUCTURE OF RUBBER.—Dr. Heinrich Feuchter, *Kautschuk*, December, 1925, 6-10. Table, graph.

CONTRIBUTIONS TO THE STRUCTURE OF STRETCHED RUBBER TEST-PIECES.—Dr. E. A. Hauser, *Kautschuk*, December, 1925, 10-11.

CONTRIBUTIONS TO THE ANALYSIS OF GOLDEN SULPHURET OF

ANTIMONY.—Dr. Lothar Hock, *Kautschuk*, December, 1925, 11-13. Table, diagram.

RUBBER AS DISPERSION MEDIUM.—H. Pohle, *Kolloid-Zeitschrift*, January, 1926, 75-76.

THE USE OF MICRODISSECTION IN COLLOID CHEMISTRY.—Ernst A. Hauser, *Kolloid-Zeitschrift*, January, 1926, 76-80. Illustrations.

SYNTHETIC RUBBERS.—Paul Bary, *Revue Générale du Caoutchouc*, December, 1925, 3-11. Illustrated.

THE RESISTANCE TO TRACTION OF VULCANIZED RUBBER.—Experimental and mathematical discussion.—R. Ariano, *Nuovo Cimento*, Pisa, Italy, New Series, October, November, December, 1926. Charts, Italian.

AGING OF CRUDE AND VULCANIZED RUBBER. I.—A. Cherbuliez, *Revue Générale du Caoutchouc*, December, 1925, 15-18.

THE RETREADING INDUSTRY.—*Revue Générale du Caoutchouc*, December, 1925, 20-21. Illustrations.

NEW EBONITE TESTING ACCESSORIES FOR THE SCHOPPER MACHINE.—R. Honwink, *India Rubber Journal*, February 6, 1926, 227-228. Illustrated.

Legal Decisions

Patents

DOVAN CHEMICAL CORPORATION VS. CORONA CORD TIRE CO., in Equity No. 1109. District Court of the United States for the western district of Pennsylvania.

The Dovan Chemical Corporation, assignee of Morris L. Weiss has brought its action against the Corona Cord Tire Co. for alleged infringement of Weiss patent No. 1,411,231 for a vulcanization accelerator. The application was filed November 12, 1921, and the patent was granted March 28, 1922. The plaintiff sought by ordinary injunction the delivery or destruction of di-substituted guanidines, particularly diphenyl guanidine, which the defendant may have, and an accounting. This case was tried last October before Judge Gibson, who concluded his opinion with the decision "That Morris L. Weiss was not the actual independent inventor and discoverer of DPG as an accelerator" and ordered a decree drawn in accordance with this conclusion.

Customs Appraisers' Decisions

CLOTH, RUBBER COATED; AND COATS, CAPES, ETC.—Manufactured by the New York Mackintosh Clothing Co., of Mamaroneck, New York, with the use of imported piece goods. Rate effective on and after May 20, 1925. The drawback allowance shall not exceed the duty paid, less 1 per cent thereof, on the imported piece goods used in the manufacture of the exported products, as shown by the abstract from the manufacturing records provided for above.—*Treasury Decisions*, Volume 49, No. 5, page 6.

No. 50800. Protests 125003—G, etc., of Louis Wolf & Co. (New York). Colored rubber balls classified as toys at 70 per cent ad valorem under paragraph 1414, tariff act of 1922, are claimed dutiable at 30 per cent under paragraph 1402. Opinion by Sullivan, G. A. In accordance with stipulation of counsel and on the authority of United States v. Stewart (12 Ct. Cust. Appls. 533; T. D. 40734) the colored rubber balls in question were held dutiable under paragraph 1402 as claimed.—*Treasury Decisions*, Volume 49, No. 2, page 17.

DURING THE FIRST ELEVEN MONTHS OF 1925 THE UNITED KINGDOM has imported from the United States 471,501 pairs of rubber boots, value $952,618; and 207,510 pairs of rubber shoes, value $149,451. For the entire year 1922 the combined importations of such goods by England, Scotland, and Ireland totaled, for rubber boots, only 52,199 pairs, value $104,680; and rubber shoes, 76,697 pairs, value $61,383.

Statistics Compiled from 1925 Questionnaire Covering the Fourth Quarter of 1925[1]

RECLAIMED RUBBER	Long Tons: Inventory at End of Quarter	Production	Shipments
Reclaimers solely (8)	1,140	23,290	23,430
Manufacturers who also reclaim (20)	3,612	15,550	2,973
Other manufacturers (61)	4,075	.....	.....
Totals	8,827	38,840	26,403

SCRAP RUBBER	Long Tons: Inventory at End of Quarter	Consumption in Manufacture Reclaimed	Due on Contract at End of Quarter
Reclaimers solely (8)	48,482	28,281	12,550
Manufacturers who also reclaim (20)	36,437	21,975	13,579
Other manufacturers (61)	1,927	.....	.....
Totals	86,846	50,256	26,129

NUMBER OF TONS OF CRUDE RUBBER CONSUMED IN THE MANUFACTURE OF RUBBER PRODUCTS AND TOTAL SALES VALUE OF SHIPMENTS OF MANUFACTURED RUBBER PRODUCTS

PRODUCTS	Number of Tons of Crude Rubber Used	Total Sales Value of Shipments of Manufactured Rubber Products
Tires and Tire Sundries.		
Automobile and motor truck pneumatic casings	47,120	$154,782,000
Automobile and motor truck pneumatic tubes	12,978	30,184,000
Motorcycle tires (casings and tubes)	86	528,000
Bicycle tires (single tubes, casings and tubes)	247	889,000
All other pneumatic casings and tubes, not elsewhere specified	.....	91,000
Solid tires for motor vehicles	3,298	11,343,000
All other solid tires	55	380,000
Tire sundries and repair materials	1,300	5,898,000
Totals	65,084	$204,095,000

PRODUCTS	Number of Tons of Crude Rubber Used	Total Sales Value of Shipments of Manufactured Rubber Products
Other Rubber Products:		
Mechanical rubber goods	4,128	$26,157,000
Boots and shoes	3,840	35,111,000
Insulated wire and insulating compounds	901	10,406,000
Druggists' sundries, medical and surgical rubber goods	568	3,503,000
Waterproof cloth, clothing and rubber sheeting	500	5,471,000
Hard rubber goods	583	4,059,000
Heels and soles	2,039	8,580,000
Rubber flooring	161	1,057,000
Miscellaneous, not included in any of the above items	1,122	5,040,000
Totals	13,842	$99,384,000
Grand totals—all products	78,926	$303,479,000

INVENTORY OF CRUDE RUBBER IN THE UNITED STATES AND AFLOAT FOR UNITED STATES PORTS

ON HAND	Long Tons: Plantation	Pará	All Other	Totals
Manufacturers	34,502	2,769	2,027	39,298
Importers and dealers	8,325	465	348	9,138
Totals on hand	42,827	3,234	2,375	48,436
AFLOAT				
Manufacturers	23,849	253	233	24,335
Importers and dealers	24,657	483	325	25,465
Totals afloat	48,506	736	558	49,800

[1] Number of rubber manufacturers that reported data was 205; crude rubber importers and dealers, 44; reclaimers (solely), 8; total daily average number of employes on basis of third week of October, 1925, was 152,095.

It is estimated that the crude rubber consumption figures are 92 per cent of the total, and the crude rubber inventory 95 per cent of the total for the entire industry.

AKRON UNIVERSITY FELLOWSHIPS IN RUBBER CHEMISTRY

During the college year 1926-27 there will be offered at the Municipal University of Akron two fellowships in the study of rubber chemistry, each representing a fund of $1,000, with exemption from all fees and charges. The opportunity is being offered by the Goodyear Tire & Rubber Co. and the Firestone Tire & Rubber Co., both of Akron, Ohio. Those desiring further information should address H. E. Simmons, professor of chemistry at the university.

New Goods and Specialties

Hookless Galosh

This novelty gaiter combines two features in a very satisfactory manner; namely, style and practicability. As the illustration shows, there are two fasteners, one at the back of the heel and the other at the cuff. The fabric is cut in such a way that it stretches over the ankle and the instep without wrinkling and, therefore, makes a neat appearing shoe. The uppers of "Bobbette" are of double thread jersey, with non-crocking fleece lining, and it comes in black and two tone effects in fawn and burgundy with harmonizing sole and foxing.—Converse Rubber Shoe Co., Malden, Massachusetts.

"Bobbette"

Double-Grip Air-Cooled Cord Tire

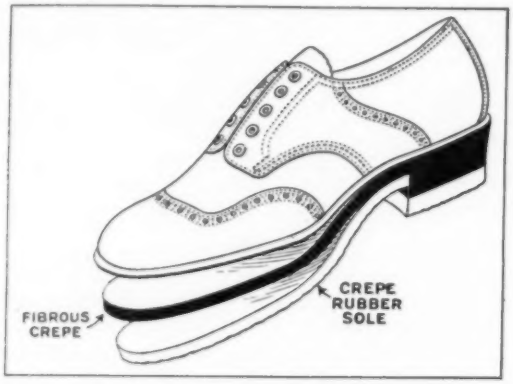
The manufacturers claim that skidding is prevented under all road conditions by the diamond shaped tread design of this tire, aided by the cross chain members; also that the radial ribs on the sidewall prevent wheel spinning in deep mud, and serve to keep the carcass cool under abnormal temperatures developed by surface heat and internal friction. The radial ribs also protect the carcass from harm, acting as buffers to curb and rut abrasions besides adding greatly to the attractive appearance of the tire.

Schenuit Cord Tire

Each size is built to heavy duty specifications, the 3½-inch size having 4 plies; 4-inch size, 6 plies; and all the 4½ and 5-inch sizes, 8 plies. The 4.40 and 5.25 balloons are of 4 ply and everything above of 6 ply construction. No reclaimed rubber is used in tread or sidewall construction, the sidewall being heavier and the tread having 30 per cent more rubber by volume than ordinary quality tires.—F. G. Schenuit Rubber Co., 1200 Mount Royal avenue, Baltimore, Maryland.

Fibrous Crêpe Soling

The attachment of crêpe soles to leather footwear either by sewing or cementing presents practical difficulties. In the case of sewing the stitches are liable to cut through the crêpe, particularly at the toe, and render the sole valueless. In the case of cementing the leather undersole requires to be free of all oil and to be buffed but even with these precautions failure of the crêpe sole to adhere is possible. These disadvantages are all avoided by stitching to the welt a special fibrous crêpe. This is a very strong light material consisting of fibers impregnated and united under pressure with latex rubber. It is made in sheets ⅛ by 13 by 36 inches, is very light and durable, and neither tearable nor stretchable in wear. It can be stitched, nailed, buffed, skived, channeled, etc., in fact handled exactly like leather. By its inherent affinity for rubber it requires no preparatory work, such as buffing, to fit its surface for the attachment of crêpe soling. The application of a single coating of special quality non-inflammable rubber solution to the surfaces of the fibrous crêpe and the rubber is all that is necessary to effect permanent adhesion of the materials.—Crêpe Sole Rubber, Limited, 24-25 Great Tower street, London, E. C. 3, England.



Application of Fibrous Crêpe Soling

Rubber Sponges

There need be no inharmonious note in the bathroom now that sponges are made up in shades to blend with any color scheme which may be used, among the most striking tints being yellow, lavender, green, henna, blue and gray. Some of these sponges have inlaid initials which quickly identify them to their owners doing away with a lot of confusion and adding to their sanitary qualifications.

Sponges with Inlaid Initials

They come in a variety of sizes: round, square and oval. All of the sponges used in the illustration are manufactured by Belinde Werke Aktiengesellschaft, Dovenfleth, 52, Hamburg, Germany.

Rubber Hat Dolls

These quaint little all-rubber dolls are comic and irresistible. Made of best heavy rubber in all colors, each doll is further adorned with a large hat. There is the Eton boy, enameled in colors and with his cunning little high hat; the bathing belle and

"Bonzo" Dolls

her real bathing cap; and the little flapper with her large picture hat set at a rakish angle. "Bonzo" is the trade name under which the dolls are put out and they are manufactured by A. W. Gamage, Ltd., Holborn, London, E. C. 1, England, who claims for them a great vogue in London.

Stocking Protectors

The combination of wet, slushy weather and light colored stockings has caused many complaints of unsightly splashes and marks. These can now be eliminated by the rubber gaiters pictured, which are of double proofed rubber and made for men as well as women and children. They are easily put on and removed and do away with much embarrassment and annoyance due to mud and dirt.—Olivers, Winchester avenue, Silver street, London, E. C. 2, England.

Rubber Gaiters

Hylastic Cord

This new cord tire invention was prompted by the necessity of balloon tires for a cord which would stretch and rebound, as the extremely low pressure of the balloon type causes the side walls to flex and bend. The cord receives its name because of its dominant, inherent qualities of high tensile strength and elasticity. A single strand will stretch 25 per cent and still hold a 20 pound weight, and when the tension is relieved it immediately snaps back to its original length—just like a rubber band.—The Mason Tire & Rubber Co., Kent, Ohio.

Inertum Gas

Balloon type tires to function right must be kept within close limits of the manufacturers' prescribed inflation pressure, but because of dialysis and accelerated by the large inner tube area, they lose air pressure quickly. Repeated air inflation, aside from the annoyance caused, produces rapid oxidation or rubber aging. Inertum holds pressure as it diffuses through rubber very slowly and has no aging or rotting effect, many technical authorities considering it far better than air for keeping tires inflated. Inertum in cylinders is under 2,200 pounds pressure; one cylinder with reducing valve fills to proper pressure sixty large tires at a cost so low as to be negligible.—P. C. Avery, Milwaukee, Wisconsin.

Hose Nozzle and Lawn Sprinkler

Garden hose nozzles and lawn sprinklers are familiar in great variety. The device here pictured gives the user both articles in one. It is called a water gun and offers the advantages of simplicity and convenience. The fitting can be used for hand watering or set in the ground for fixed sprinkling. When set at an angle in the ground it can be changed from one location to another without turning off the water. If set at a corner one may spray in a straight line down each side.—Penberthy Injector Co., Detroit, Michigan.

Penberthy Water Gun

Radiator for Six-Wheel Bus

A new radiator for motor bus service has been developed by the Six Wheel Co. and built according to their specifications by the United States Cartridge Co. This radiator has a re-flow tank which prevents the water supply from becoming low in hot weather and also the loss of anti-freeze mixture during winter. The radiator shell is mounted on a flat piece of steel which is attached to the frame, the core being mounted inside of the shell on rubber pads which absorb vibration and shock. The radiator filler spout goes through the shell but is not rigidly attached to it, thus permitting the core to float and in the event of a twist no stress is transmitted to the core of the tanks. It also saves the core from shock and, in case of accident, permits of a quick change.

Shower Bath Brush

In order to provide bathing equipment at nominal cost to those of limited means, the Knickerbocker Manufacturing Co., 2335 West Van Buren street, Chicago, Illinois, has added to its line the "Knickerbocker Junior." In this set the owner secures the shower from a flexible rubber brush in simple but efficient form. These sprays help to keep the bath room clean, as the water goes only where directed and combines a running water shower bath with an invigorating massage. Rubber curtains are not required as the Knickerbocker does not splash, and is sanitary because there are no crevices or cracks to collect dirt and germs. The brush keeps itself clean as the water flows through each hollow rubber nipple, is always ready for instant use and saves work as there is no cleaning of bathtub necessary after the bath.

"Knickerbocker Junior"

Crêpe Sole Edge Dyes

It is frequently desirable to color the edges of crêpe rubber soles to match the color of the leather shoes. A practical difficulty is encountered in the fact that ordinary leather stains soon rub off in wear. A line of special color stains, known as Bateman's non-inflammable crêpe rubber edge stains, has been perfected. These are applied in one thick coat with a brush. After a few minutes the coating becomes quite dry and ordinary shoe polish can be applied over it without difficulty or damage.—Crêpe Sole Rubber, Limited, 24-25 Great Tower street, London E.C. 3, England.

Baseball with Waterproof Cover

The new Marathon Flexyde baseball is made with waterproof and almost indestructible cover which displays exceptional durability even when batted against concrete abutments. It is regulation in weight and size, official and standard in every respect, and it is claimed that the new type of construction offsets the tolerance found in most baseballs outside of the major leagues. Of the accepted cork and rubber center construction, together with the added feature of a tough, waterproof cover which can be wiped dry, a clean, smooth, dry, fast ball is provided at all times. The inability of water to injure this baseball has removed the bugbear which disallowed replacement on baseballs that have become wet.

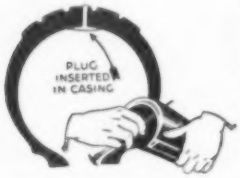
Probably the feature of the Marathon Flexyde that will appeal to the sandlot, high schools and similar classes of teams where equipment cost is a big factor, is the fact that it is being marketed at the price asked for baseballs ten years ago and now within the reach of all.—The Goodyear Tire & Rubber Co., Akron, Ohio.

Unvulcanized Rubber Tape

The most practical method of applying joint insulation in rubber insulated wire is in the form of unvulcanized rubber tape, as vulcanized rubber tape will not coalesce into a homogeneous mass after application and so is impossible to use to make a satisfactory water tight joint. Low grade splicing compounds containing shoddy instead of new live rubber are usually semi-vulcanized thus meeting the tensile strength requirements of specifications. A perfect splicing compound must therefore be made of the highest grade rubber, be absolutely unvulcanized in order to mold properly, and have the highest dielectric strength and insulating resistance. Okonite tape is guaranteed by its makers to meet all these requirements, being made with upriver fine Pará rubber, washed free from impurities and air dried.—Okonite Co., 501 Fifth avenue, New York, N. Y.

Puncture Plug Tire Rivet

Automobile accessories dealers are finding a great demand for the Wedford Kex plugs which make for quick and permanent repair of punctured tire casings. To repair a puncture insert the stem of the plug in the shank of the needle, push needle through hole in casing from inside. A little cement on the needle and a pair of pliers make the job still easier. Many repairmen also use cement on flat side of plug head. Clip off stem flush with outside of casing. When using large size plug open end of needle with knife.



The Wedford Kex Plugs

The manufacturers claim that Wedford Kex plugs will add from five hundred to one thousand miles to casings as they prevent water, dirt and sand from working through and rotting casings which have been punctured. Sand blisters and consequent blow-outs are frequently caused by neglected puncture holes. For shops and service stations the plugs are packed in boxes containing fifty of assorted sizes, needle and instructions; individual car owners may secure them in smaller boxes holding eight, assorted sizes, one tube of cement, a piece of patching rubber and needle.—The Wedler-Shuford Co., 1116 South Grand Boulevard, St. Louis, Missouri.

Rubber Soled Sport Shoe

The constantly increasing demand for sport shoes has brought out many new models, one of the smartest being the shoe illustrated. This model is designed with uppers of leather and soles of pure rubber, and is only one of the many additions which the Taylor Shoe Co., 210 Lincoln street, Boston, Massachusetts, has added to its line. The "Blonde Elk" tip and throat collar of light shade calf give it real style snap sure to prove popular.

Men's Sport Shoe

Throat Ice Bag

Because of its shape this ice bag holds many times the amount of ice that the ordinary straight bag will hold and may be used either with ice or ice water. The bag is made of cloth-inserted maroon rubber of the best quality and has a concealed spring which permits it to be fastened around the neck without the necessity of having to tie it.—The Watters Laboratories, 155-159 East 23rd street, New York, N. Y.

Circular Ice Bag

Protection Against Headlights

As a protection against a late afternoon sun or glaring headlight, Glaroff forms a perfect glareshield. It consists of sturdy duo special rubber compo sidewalls, encircling an amber transparency or glass lens, scientifically colored and sized to protect the eyes. It is a little over 5 inches in diameter and weighs less than 8 ounces. The Glaroff is placed to the left of the driver who has only to turn his head a little when blinding headlights approach to obtain full protection from the on-rushing glare. There are no bolts or screws necessary to secure this device, fingers being the only tools necessary. In cold weather the Glaroff acts as a stormwindow in keeping the frost or moisture from accumulating on the inside of the windshield beneath it.—The Glaroff Manufacturing Co., Sioux Falls, South Dakota.

Glaroff

The Obituary Record

Prominent Trenton Rubber Manufacturer

THE many friends and business associates of Joseph Oliver Stokes, well known rubber manufacturer of Trenton, New Jersey, were deeply grieved to hear of his death on January 24 at his home in Santa Monica, California. Although it was known for some time that his health was poor, his death was not expected. In 1923 Mr. Stokes took a six months' trip abroad, returning to his duties with his former vigor apparently restored, but for the last few years he had found it necessary to remain in California, although visiting his Trenton friends once a year.

Joseph Oliver Stokes

Born October 10, 1859, in the town of Weissport, Pennsylvania, Mr. Stokes began his business career at the early age of eighteen, entering the office of the New Jersey Steel & Iron Co., of which organization his father, Joseph Stokes, was superintendent. He remained there about a year, but becoming interested in the rubber industry, he incorporated in Trenton, New Jersey, the Standard Rubber Co., with a capital of $10,000, the chief stockholders being his father and himself. At that time gossamer rubber clothing was in great demand, and the new organization devoted itself to that product. Six months later, with added capital and an increased mechanical equipment, the concern changed its name to the Home Rubber Co., a close corporation, the executives including Joseph Stokes, president; W. J. B. Stokes, vice-president; Charles E. Stokes, superintendent; and Joseph Oliver Stokes, treasurer and general manager.

Although the plant in 1884 was entirely destroyed by fire, it was at once rebuilt and the manufacture of clothing abandoned, the company instead devoting its energies to the production of mechanical rubber goods. From that time on the business showed a steady growth, and in the ten years following its organization the plant was three times enlarged.

In 1896 the four owners of the Home Rubber Co. formed a second close corporation under the name of The Joseph Stokes Rubber Co. and acquiring a rubber reclaiming plant in Trenton, enlarged it to increase the production of reclaimed rubber. Later on manufactures included mechanicals and tires, but finally these products were discontinued and hard rubber goods manufactured exclusively. A still later development was the establishing in 1921 at Welland, Ontario, Canada, of The Joseph Stokes Rubber Co., Ltd., an outgrowth of the Trenton organization of the same name, and having the same officers, although its affairs were kept entirely separate.

In 1897 the Stokes interests were still further advanced through the buying of the property formerly owned by the Trenton Rubber Co. In this new venture J. O. Stokes was again associated with one of his brothers, W. J. B. Stokes, and Edward H. Garcin. The business was carried forward uninterruptedly until June, 1909, when fire destroyed a part of the factory. At this juncture the plant was rebuilt, enlarged, and the name of the concern changed from the Trenton Rubber Manufacturing Co. to the Thermoid Rubber Co., under which title the business is still being successfully maintained. In more recent years the plant has been several times extended, especially important changes having taken place in 1920, when the capital stock was increased to $5,000,000.

In 1921 J. O. Stokes, with his brothers, organized the Stokes Asbestos Co., for the purpose of manufacturing rubber and asbestos articles. The concern was incorporated with a capital of $1,000,000, and the new plant was built adjoining that of the Thermoid Rubber Co., for the manufacture of special brake lining fabric.

In the development and management of all these enterprises, J. Oliver Stokes took a prominent part. At the time of his death he was president of the Thermoid Rubber Co., The Stokes Asbestos Co., and treasurer not only of the Home Rubber Co. but also of The Joseph Stokes Rubber Co. of Trenton and the corresponding Canadian plant.

A man of strength, both physical and mental, Joseph Oliver Stokes had the necessary qualifications for carrying forward his chosen work. Although possessed of great determination, he had a strong feeling for commercial honor, combined with a judicial mind and a thorough knowledge of every detail of his business.

Always one who was remarkably fond of and loyal to those of his own kin, this trait had its greatest expression in love for his only son in whom all his hopes centered. The boy, a most attractive and lovable character, passed away at the age of nineteen. The frantic and ever-present grief of the father was pitiable beyond description. Indeed, the years of ill health that marked his last days were directly traceable to the shock of that great bereavement.

The loss, to him irreparable, however, did not alter his outlook upon life or his attitude toward others. He remained always the soul of courtesy, respectful of the opinions of others, munificent in his charities, and never lost the rare faculty for tactfully settling differences and pointing the way toward wise and progressive business procedure.

He is survived by his widow, three sisters, two brothers, W. J. B. Stokes and Charles E. Stokes, and Robert J. Stokes, a nephew. Burial was in the family plot at Trenton.

Will of J. Oliver Stokes

J. Oliver Stokes willed his residuary estate of at least $1,000,000 to the City of Trenton, for the Joseph Stokes Memorial School, in memory of his son, Joseph Oliver Stokes, who died at the age of 19 years while a student at Princeton University. The will provides that his widow, Ann B. Stokes, shall have the income from the estate during her lifetime, and upon her death that it shall pass to the Trenton Board of Education. She is given the home in California and its contents. The sum of $75,000 is to be held in trust and the income paid to Anna B. Meyers, a grandniece. Mrs. Minnie S. Royal, a sister, is given $15,000, and $15 weekly will be paid to Ellen M. Phillips during her life. His nephews, Joseph S. Royal, Edward L. Royal, and Horace M. Royal are each to receive 250 shares of Thermoid Rubber Co., common stock. Robert J. Stokes, a nephew, is given 2,500 shares of stock in the Thermoid Rubber Co. Mrs. Stokes is named as executrix of her husband's estate.

A Well Known Footwear Sales Executive

Following a short illness, George H. Mayo, second vice-president of the United States Rubber Co., died on January 6 at his home in Scarsdale, New York. He was in the fifty-first year of his age. Because of poor health, he had retired from active service on May 1, 1925, but was continuing with his organization in an advisory capacity.

George H. Mayo

Mr. Mayo's first connection with the rubber industry began in 1894, when he began work with William H. Mayo & Co. of Boston, a wholesale distributing organization founded by his father, and which in 1900 devoted its attention to rubber footwear exclusively. The concern was in 1912 acquired by the United States Rubber Co., and George H. Mayo put in charge of the opening of several branch stores for the sale of Hub-Mark footwear.

Appointed in 1913 as Merchandise Manager of Branch Stores, Mr. Mayo at that time came to New York City, while in 1917 he was advanced to the position of manager of the United States Rubber Company's Footwear Division. On October 7, 1920, he was elected second vice-president in charge of sales of the General Division.

During the war Mr. Mayo was a member of the War Service Committee and served as chairman of the Footwear Division. He was also a member of The Rubber Association of America and held the position of chairman of the Footwear Division from the time it was formed in 1918 until 1924.

Among the senior executives of the company that Mr. Mayo represented for so many years, there is a sense of sincere grief and loss, while members of the rank and file who knew this kindly man feel that they have lost a personal friend.

George Mayo's introduction to the rubber trade at large came through his position as Secretary of the New England Rubber Club. Alert, businesslike, clear headed, pleasant, he helped much in laying the foundation of the great association that grew out of the Boston beginnings. A pleasant speaker, and graceful writer, he also had the valuable asset of remembering faces and names and a genuine interest in all with whom he came in contact,—a brilliant, able man, the ending of whose career means a distinct loss to the industry with which he was so closely affiliated.

Mr. Mayo is survived by his wife, a son and a daughter.

Prominent in Rubber and Linoleum Manufacture

George Rae Cook, for many years one of Trenton's foremost rubber and linoleum manufacturers, died on January 31 at his winter home in Camden, South Carolina, at the age of 60 years. Following his custom for 20 years, Mr. Cook left Trenton, New Jersey, last fall for the South, but soon returned to consult a specialist in Philadelphia. He later returned to Camden, where he was seriously ill for three weeks prior to his death.

Mr. Cook had been connected with the financial, commercial, manufacturing, and social life of Trenton for many years. He was a descendant of a family that settled in New Jersey more than a century ago. Born at East Millstone, New Jersey, he received his education under private tuition, and was well equipped to attain the prominent position which he later held in the city's industries.

When a young man Mr. Cook moved to Princess Ann, Maryland, where his father had purchased a plantation, but later returned to Trenton and entered the pottery industry. After being connected with the Empire Rubber Co., of Trenton, for some time, together with Frank A. Magowan, he established the Trenton Rubber Co. in 1887, being made treasurer and general manager.

The manufacture of linoleum was started in Trenton twenty-seven years ago when Mr. Cook became interested in the Trenton Oilcloth and Linoleum Co., and in 1900 he formed the Standard Inlaid Manufacturing Co.

In 1902 he disposed of his holdings in the Empire Rubber Co., and formed the Acme Rubber Manufacturing Co., which originally was known as the Eureka Rubber Manufacturing Co. In 1896 Mr. Cook purchased the Hamilton Rubber Manufacturing Co., and in 1904 acquired the Combination Rubber Co., Bloomfield, New Jersey. The Combination company was moved to Trenton a few years ago. At the time of his death Mr. Cook was at the head of the Acme, Hamilton and Combination rubber companies and president of the Cook Security Co. While prominent in industry, Mr. Cook never entered political life nor was he active in civic, religious or fraternal societies, but contributed largely to the Young Men's and Young Women's Christian Associations.

George Cook was one who accomplished much industrially in a very unostentatious manner. He described himself as a "slow thinker." Nevertheless, he was a very sound one, and his conclusions were uniformly wise. Modest and retiring, he never forced his opinions upon others but on the contrary was ever an interested and intelligent listener. To those who really knew him his passing is a great loss beyond expression.

He is survived by two sons, a daughter and one brother, Charles Howell Cook, pottery manufacturer. Mr. Cook was a member of the Trenton Club and Trenton Country Club, and was intensely interested in golf. Burial was in the family plot in Riverview Cemetery, Trenton.

TIRE TREAD DUST DOES NOT MENACE HEALTH

An item published recently in the *Cleveland Press* stated that tests show four tenths of a pound of pure lead are contained in a ton of street dust, and that its presence, according to Health Commissioner H. L. Rockwood, is a serious menace to public health by being inhaled with the dust. The Commissioner is credited with the opinion that the lead mentioned is derived from the wearing down of automobile tires and cites the unrelated and questionable information that "In certain processes in rubber molding more than 20 per cent of lead is used and workers are protected by a variation of a gas mask." As a matter of fact tire tread stocks are practically free from lead in any form, zinc oxide rather than litharge being used to stimulate the vulcanizing reaction. The Commissioner would be nearer the truth if he attributed the presence of lead in street dust to the wear of the rubber shoe soles, and rubber heels. Such rubber goods contain litharge in minor proportions. Litharge is never used in any rubber articles to the extent of 20 per cent.

RUBBER PLANTING IN CALIFORNIA

The Intercontinental Rubber Co., 120 Broadway, New York, N. Y., will soon make its first transplanting of guayule shrub seedlings on 200 acres of selected land in California. The aim of this company is to promote production of rubber in America through development of guayule cultivation in sections of the United States where climatic conditions are favorable. Seed beds will be prepared this year for planting additional acreage in 1927.

The Intercontinental Rubber Co. which has been producing rubber profitably in Sumatra and Mexico is said to be the only public or private agency which has developed a concrete plan and program for rubber production on a large scale in the United States. The guayule shrub which the company proposes to cultivate is stated to be the only plant bearing rubber in commercial quantities capable of withstanding frost, a necessary characteristic for its successful exploitation in this country.

News of the American Rubber Trade

Rubber Industry Outlook

BUSINESS in general is conceded to be progressing steadily and free from notable activity or dullness. The condition of the rubber industry conforms to this general statement.

The January motor car production reached 333,727, a gain of 4 per cent over that for December and 38 per cent above that for January, 1925. The leading automobile shows stimulated prospective orders of excellent volume, suggestive of undiminished increase in car production and rubber consumption.

The crude rubber situation has changed for the better since lessening of the tension of six weeks ago over the restricted supply and its abnormally high prices. Consumption has declined owing to the general reduction of tire production to about 75 per cent of capacity in conformity with the action of tire dealers who felt some uncertainty as to the price situation. The anticipated tire price reduction announced February 3 by two of the leading tire companies was due to the fall in rubber prices. This reduction was 10 per cent on all first line tires and tubes, and on second quality lines from 3½ to 12 per cent with guarantees against further declines extending to June 10.

The only important branch of the industry that exhibits actual lack of orders is the insulated wire division. The reason for this is not apparent. Manufacturers have been led to relieve the situation by doing more or less cutting in prices. In this, as in most lines, revision of compounds is in force to conserve crude rubber. The leading products of the industry, tires and tubes, are at about 75 per cent of full capacity output with full schedules probable in the early spring months.

The recent heavy snow fall, of wide extent on the Atlantic seaboard and mid west, served to clean up all surplus stocks of rubber footwear, thus paving the way for a busy season in that line. The mechanical goods division is busy with orders for general railway and industrial equipment and with such seasonal goods as fruit jar rings and garden hose, the annual consumption of which runs to heavy tonnages.

Financial

Lee Rubber & Tire Corporation

The directors of the Lee Rubber & Tire Corporation, Conshohocken, Pennsylvania, have voted to increase the issued capital stock of the company by offering pro-rata to the stockholders 85,163 shares of treasury stock. This offering will be made to stockholders of record January 18, 1926, at $12.50 per share. The entire issue has been underwritten by a banking syndicate.

The earnings of the company for the year (December partly estimated), were $284,538.96, equal to $1.32 per share on the present outstanding stock of the company.

The Fisk Rubber Co.

The Fisk Rubber Co.'s, Chicopee Falls, Massachusetts, annual report shows gross sales less returns and allowances for the year amounted to $74,900,373.34, being an increase of $21,953,841.69 or 41 per cent compared with 1924 sales. This is the result of a 30 per cent increase in unit sales and price advances due to increased cost of crude rubber during the last half of the fiscal year. Operating profits after depreciation, selling and administration expenses and inventory reserves but before interest and federal taxes were $9,981,812.18, and after interest and other charges $8,958,905.82, compared with $3,136,664.13, for the year ended October 31, 1924. After making provision for federal taxes, the net profit for the year was $7,608,905.82. Out of this amount the directors have set aside as a reserve for contingencies $1,500,000.

The balance sheet shows current assets of $31,276,407 and current liabilities of $3,215,494, a ratio of current assets to current liabilities of 9.7 to 1.

CONSOLIDATED PROFIT AND LOSS ACCOUNT YEAR ENDED OCTOBER 31, 1925

Gross sales, less returns and allowances		$74,900,373
Cost of sales, including depreciation, selling and administration expenses together with reserve for possible decline of inventory values		64,976,986
		$9,923,387
Add miscellaneous income		58,425
Operating profit after depreciation but before interest and federal taxes		$9,981,812
DEDUCT		
Interest on borrowed money less interest received	$183,279	
Interest on first mortgage bonds	673,226	
Amortization of discount and other expenses in connection with issue of mortgage bonds	99,708	
Premium and commission on bonds purchased for retirement	8,847	
Loss on sale of capital assets no longer required	57,846	1,022,906
Profit before deducting provisions for federal taxes and contingencies		$8,958,906
Less provision for federal taxes		1,350,000
Net profit after interest and federal taxes		$7,608,906
Less amount set aside as additional reserve for contingencies		1,500,000
Balance carried to surplus account		$6,108,906

CONSOLIDATED SURPLUS ACCOUNT AT OCTOBER 31, 1925

Balance at October 31, 1924	$8,348,770
Transferred from profit and loss account October 31, 1925	6,108,906
	$14,457,676
Deduct, dividends declared during year on 1st preferred stock	1,025,696
Surplus at October 31, 1925, carried to balance sheet	$13,431,980

COMPARATIVE CONSOLIDATED BALANCE SHEET

	Oct. 31, 1925	Oct. 31, 1924
ASSETS		
CAPITAL ASSETS		
Land, buildings, machinery and equipment	$26,274,969	$25,431,177
Less reserve for depreciation	7,100,317	5,891,239
Depreciated value	$19,174,652	$19,539,938
Goodwill	1	1
	$19,174,653	$19,539,939
Investments	$2,829,245	$2,447,695
CURRENT ASSETS		
Inventories, less reserve	$11,110,973	$12,583,273
Accounts and notes receivable, less reserve	12,016,537	9,202,051
Cash in banks and on hand	8,148,897	2,246,055
Total current assets	$31,276,407	$24,031,379
Deferred Charges, Including Financing:		
Expenses of bond issue	1,180,007	1,435,953
Total assets	$54,460,312	$47,454,966
LIABILITIES		
CAPITAL STOCK		
7% Cumulative 1st preferred stock	$18,520,900	$18,951,500
Management stock	15,000	15,000
7% Cumulative second preferred stock	1,006,000	1,079,000
Common stock	7,791,640	7,543,145
Total capital stock	$27,333,540	$27,588,645
1st mortgage 20-yr. 8% sinking fund gold bonds	8,370,000	8,474,000
CURRENT LIABILITIES		
Accounts payable including provision for federal income tax	3,215,494	2,178,866
Reserve for contingencies	2,109,298	864,684
Surplus	13,431,980	8,348,771
Total liabilities	$54,460,312	$47,454,966

The B. F. Goodrich Co.

Net sales of The B. F. Goodrich Co., Akron, Ohio, for the fiscal year ended December 31, 1925, were in excess of $136,000,000. The net profits from operations for that period after deducting ample depreciation on properties, interest on borrowed money and $2,350,-

000 for federal income taxes, were approximately $16,700,000. From these net operating profits the company has set aside an additional reserve of $4,000,000 for contingencies and to cover possible losses due to fluctuation in price of raw materials.

Current assets on December 31, 1925, were approximately $67,742,000 and the current liabilities approximately $19,390,000.

At a meeting of the Board of Directors held on January 27, 1926, dividends on the preferred stock were declared as follows: $1.75 per share payable April 1, 1926, to stock of record March 15, 1926, and $1.75 per share payable July 1, 1926, to stock of record June 15, 1926. The directors also declared a dividend of $1.00 per share on the common stock payable March 1, 1926 to stock of record February 15, 1926. The directors also approved the retirement of 11,880 shares of preferred stock in accordance with the provisions of the charter.

General Tire & Rubber Co.

Stockholders of the General Tire & Rubber Co., Akron, Ohio, have approved a plan to double the outstanding capital stock and reduce the par value in the setting aside of $100,000 worth of stock for sale to employes. Articles of incorporation have been amended to provide for the issuance of 100,000 shares with a par value of $25 instead of 50,000 with a par value of $50.

The company reported net earnings of $1,843,299, deducting all charges, for the year ended November 30, 1925, equivalent to $44 per share on the common stock. Gross business for the year was $18,700,000, an increase of practically 50 per cent over 1924, when the sales were $13,152,000 and profits $1,500,000. A 50 per cent increase is expected by officials this year.

The Goodyear Tire & Rubber Co.

Net sales, exclusive of subsidiary companies, were $169,470,112 in 1925 as against $115,325,175 in 1924. The total combined Goodyear sales of the Akron, California and Canadian companies and foreign branches were $205,999,829 in 1925 and $138,777,718 in 1924.

Earnings of the Akron company after federal income tax but before interest and other charges were $26,284,672 in 1925, as against $17,363,162 in 1924. After deduction of interest and all other charges, the net profit for the year was $21,005,898 in 1925 and $12,161,540 in 1924. After appropriating $7,500,000 as a special raw material reserve, the net earnings available for dividends were $13,505,898. After payment of dividends amounting to $5,655,156 the remaining surplus at December 31, 1925 was $30,649,319 as against $22,798,576 in 1924. Cash was $15,750,059 and the ratio of current assets to current liabilities was 6.5 to 1.

During the year 1925, bonds and debentures amounting to $3,681,500 in principal amount were retired through the regular operations of the sinking funds. On December 31 the company had in its treasury $986,500 of debentures and had deposited with the trustee $2,280,000 for the call of additional debentures in anticipation of the regular sinking fund retirement of debentures on March 15, 1926. To partially provide for the additional working capital required to meet the expanding volume of business and the substantially higher cost of crude rubber,—$15,000,000 three year 5 per cent gold notes of the company were issued and sold in November.

Dividends Declared

Company	Stock	Rate	Payable	Stock of Record
Boston Woven Hose & Rubber Co.	Com.	$1.50	Mar. 15	Mar. 1
Goodyear Tire & Rubber Co.	Pfd.	$1.75 q.	Apr. 1	Mar. 1
Goodyear Tire & Rubber Co.	Pr. pfd.	$2.00 q.	Apr. 1	Mar. 15
Hood Rubber Co.	Com.	$1.00 q.	Mar. 31	Mar. 19
Hood Rubber Products Co.	Pfd.	$1.75 q.	Mar. 1	Feb. 19
Miller Rubber Co.	Pfd.	$2.00 q.	Mar. 1	Feb. 10

New York Stock Exchange Quotations

FEBRUARY 16, 1926

	High	Low	Last
Ajax Rubber, com.	13¾	13	13⅝
Fisk Rubber, com.	22⅞	22⅝	22¾
Goodrich, B. F., Co. (4) com.	64⅞	63¾	64
Goodrich, B. F., Co. (7) pfd.	99¾	98⅞	99¾
Goodyear Tire & Rubber (7) pfd.	107⅛	107⅜	107⅜
Goodyear Tire & Rubber (8) pr. pfd.	106	106	106
Kelly-Springfield Tire, com.	19	18¾	19
Kelly-Springfield Tire, pfd.	73	73	73
Kelly-Springfield Tire, 1st pfd.	70	70	70
Keystone Tire & Rubber, com.	1⅞	1⅞	1⅞
Lee Rubber & Tire, com.	13⅛	12¾	12¾
Norwalk Tire & Rubber, com. (1.60)	13½	13½	13½
United States Rubber, com.	83½	81½	82¼
United States Rubber, 1st pfd. (8)	108¼	108	108

Akron Rubber Stock Quotations

Quotations of February 20, supplied by Otis & Co., Cleveland, Ohio.

Company	Last Sale	Bid	Asked
Falls com.	10	8¾	10
Falls pfd.	18⅞	...	19
Faultless com.	41	40⅜	41
Firestone com.	120	...	120
Firestone 1st pfd.	102	101½	...
Firestone 2nd pfd.	99¼	99⅛	99¼
General com.	375	185	...
General pfd.	108	105½	...
Goodrich com.	69	...	...
Goodrich pfd.	99¼	...	...
Goodyear com. V. T. C.	36	38	35½
Goodyear pfd. V. T. C.	103¼	...	...
Goodyear pr. pfd. V. T. C.	104¾	...	...
India com.	158	...	156
Miller com.	44	...	44
Miller pfd.	103	102½	103
Mohawk com.	65	...	65
Mohawk pfd.	80	...	80
Seiberling com.	27	27	27¼
Seiberling pfd.	95	95	98
Star com.	11	12½	20
Star pfd.	55	...	...
Swinehart com.	9	9	...

New Incorporations

AIR CONTAINER COMPANY, INC., February 1, 1926 (Delaware), capital $250,000. Incorporators: T. L. Croteau, A. L. Miller and Alfred Jervis, all of Wilmington, Delaware. Principal office, with the Corporation Trust Company of America, DuPont Building, Wilmington, Delaware. To manufacture and deal in inner tubes.

ATLANTIC MANUFACTURING COMPANY, INC., January 13, 1926 (Massachusetts), capital $12,000. Incorporators and officers: Robert Rich, president and clerk, and Sarah Rich, director, both of 35 Hansborough street, Dorchester; Jacob Zeff, treasurer, and Dora Zeff, director, both of 133 Warren street, Roxbury; all of Massachusetts. Principal office, Boston, Massachusetts. To manufacture, buy and sell raincoats and jackets, sheepskin coats, etc.

AVIA COMPANY, INC., February 4, 1926 (New York), capital $50,000. Incorporators: Louis V. Keeler and Charles W. Walters, both of 89 Broad street, and William S. Siemon, 49 Wall street, all of New York City. Principal office, Manhattan, New York. To deal in crude rubber, etc.

WALTER H. BASS & COMPANY, INC., February 4, 1926 (New York), capital 300 shares, no par value. Incorporators: Henry A. Kiep, Jr., and W. H. Bass, both of 136 Liberty street, and Solomon Traub, 141 Broadway, all of New York City. Principal office, Manhattan, New York. To manufacture rubber articles.

A. BROOKLYN TIRE EXCHANGE, INC., January 27, 1926 (New Jersey), capital 750 shares of common stock and 500 shares of preferred stock without par value. Incorporators: Alexander Brooklyn and Alice Brooklyn, both of Passaic, New Jersey, and Albert Brown, 21 Governor street, Paterson, New Jersey. Principal office, 81 Lexington avenue, Passaic, New Jersey. To manufacture and sell automobile and all vehicular tires, tubes and accessories, etc.

CAPITOL RUBBER PRODUCTS COMPANY, INC., January 8, 1926 (Illinois), capital $4,000. Incorporators and directors: D. M. Bronstein, president; David Greenside, treasurer and secretary; Bettie Greenside and Lottie Bronstein, vice-presidents. Principal office, 322 South Franklin street, Chicago, Ill. To manufacture and job raincoats and other rubber products.

CASSIDY TIRE COMPANY, INC., November 4, 1925 (Kentucky), capital $5,000. Incorporators: L. A. Cassidy and E. M. Cassidy, both of Louisville, Kentucky, and John Casper, Pewee Valley, Kentucky. Principal office, Louisville, Kentucky. To purchase, manufacture, sell and deal in all character of automobile and other tires, tubes, repair materials, accessories, etc.

EARLE BROTHERS CORPORATION, February 13, 1926 (New York), capital 2,500 shares preferred stock $100 par value, 1,300 shares no par value. Incorporators: Russell W. Earle, 126 Willow street, and William P. Earle, Jr., 120 Willow street, both of Brooklyn, New York, and Adger C. Forney, 23 West 10th street, New York City. Principal office, 66 Broad street, New York, N. Y. To deal in crude rubber.

FREEMAN MANUFACTURING COMPANY, INC., January 16, 1926 (Massachusetts), capital $25,000. Incorporators: Eli Freeman, president, and Anna Wasserman, treasurer, both of 23 Beach street, Boston, Massachusetts, and Morris T. Silverstein, 214 Main street, Everett, Massachusetts. Principal office, Boston, Massachusetts. To buy, sell, manufacture and deal in rubber, leather, cotton, etc.

HENDERSON TIRE SALES CORPORATION, January 27, 1926 (New York), capital $10,000. Incorporators: Geo. C. Riley, C. G. Sexton and William G. Dargan, all of 714 Ellicott Square, Buffalo, New York. Principal office, Buffalo, New York. To manufacture auto tires.

J. W. LONG RUBBER & FLOORING CORPORATION, February 16, 1926 (New York), capital 300 shares par value 100, and 200 shares no par value. Incorporators: James W. Long, 924 Gravesend avenue; Leonard Jones, 502 10th street, both of Brooklyn, New York; and V. A. Pascal, 27 Cedar street, New York City. Principal office, Brooklyn, New York. Flooring.

MALBIN RUBBER COMPANY, INC., October 1, 1925 (New York), capital $10,000. Incorporators: Irving Malbin, president and treasurer; and Dorothy Malbin, vice-president and secretary. Principal office, 827 Broadway, New York, N. Y. To manufacture raincoats and allied products.

THE NANCO MANUFACTURING COMPANY, INC., January 23, 1926 (New York), capital $15,000. Incorporators and officers: Albert G. Porteous, treasurer, 15 West 106th street, New York City; Percy A. Porteous, president; Allen P. Webb, 83 East 18th street, Brooklyn, New York; and Fred L. Woodward, secretary, 7321 Fourth avenue, Brooklyn, New York. Principal office, 24 Stone street, New York, N. Y. To manufacture rubber soles, etc.

P. & B. RUBBER MANUFACTURING COMPANY, INC., February 3, 1926 (New York), capital $20,000. Incorporators: Rafael Blando, 752 Melson avenue, Laurel Hill, Long Island; Max Perlstein, 526 Montgomery street, Brooklyn, New York; and David Perlstein, 47 Hillcrest avenue, New Rochelle, New York. Principal office, Manhattan, New York. To manufacture rubber heels and soles.

PEERLESS RUBBER STAMP CORPORATION, INC., January 25, 1926 (New York), capital $9,000. Incorporators: Harry Heine, 4512 80th street, Elmhurst, New York; Herman Moench, 137 Moffat street, Brooklyn, New York; and M. W. Jonas, 262 Nielson avenue, Far Rockaway, New York. Principal office, Manhattan, New York. To manufacture rubber stamps.

PENN TIRE STORE, INC., September 25, 1925 (New Jersey), capital $10,000. Incorporators: Cecile R. Frankel, Charles Frankel and Paul H. Wendel, all of Trenton, New Jersey. Principal office, 209 South Warren street, Trenton, New Jersey. To buy, sell, distribute, manufacture and deal in rubber tires, tubes and accessories.

RELIABLE RELINER & PATCH COMPANY, INC., January 29, 1926 (New York), capital $20,000. Incorporators: Leonard Homer, 1340 Morris avenue; Michael Yagoda, 1267 Sheridan avenue, both of Bronx, New York; and Louis Brotman, 388 South 1st street, Brooklyn, New York. Principal office, Manhattan, New York. To manufacture tire patches, tires, etc.

M. ROTHSCHILD & COMPANY, INC., February 1, 1926 (New York), capital $100,000. Incorporators: M. Rothschild, president; H. Hauff, treasurer; and E. H. Simpson, secretary. Principal office, 66 Broad street, New York, N. Y. To confine itself strictly to the crude rubber brokerage business.

E. H. SCHULDT, INC., January 9, 1926 (New Jersey), capital $100,000. Incorporators: Erich H. Schuldt and Edmund George, both of 186 Runyon street, Newark, New Jersey; and R. Elmer Jones, 82 Tiona avenue, Belleville, New Jersey. Principal office, 237 Hawthorne avenue, Newark, New Jersey. To manufacture, purchase and sell rubber heels, boots and shoes, and all goods of which rubber is a component part.

SOUTHERN TIRE COMPANY, INC., January 5, 1926 (Louisiana), capital $125,000. Incorporators: Martin J. Gillman, president, and John S. Dabdoub, vice-president, both of 640 Baronne street, New Orleans, Louisiana; and William D. Wedmeyer, secretary and treasurer, 610 Maison Blanche Bldg., New Orleans, Louisiana. Principal office, New Orleans, Louisiana. To manufacture, buy, sell and deal in auto tires, equipment, accessories and supplies.

T. & B. RUBBER COMPANY, INC., November 4, 1925 (New Jersey), capital $50,000. Incorporators and officers: Gioacchino Tuso, president; Harry Blaisdell, treasurer; and Solve Tuso, secretary; all of Vineland, New Jersey. Principal office, Chestnut avenue and Second street, Vineland, New Jersey. To manufacture rubber goods, such as rubber heels, etc.

WEBSTER RUBBER COMPANY, INC., December 18, 1925 (Maine), capital $150,000. Incorporators: Don C. Hubbard, president; Parker B. Smith, vice-president; Maurice T. Plummer, treasurer; E. F. Abbott, Guy E. Flagg and George C. Webber, all of Auburn, Maine; Theodore D. Cowen, Lewiston, Maine. Principal office, Webster, Maine. To manufacture rubber goods; mainly rubber heels and rubber sheet stock.

The Rubber Trade in the East and South

The Goodyear Rubber Co., 134-136 Duane street, New York, N. Y., and the Lambertville Rubber Co., Lambertville, New Jersey, have recently provided group life insurance protection for the employes of the Lambertville factory and also of the branch offices in New York, Chicago, Philadelphia, St. Louis, St. Paul, and Kansas City. A similar program has for several years been in force for the benefit of the Goodyear employes at Middletown, Connecticut. Under the provisions of the contract employes make small contributions towards the premiums on their policies, the larger part of the premiums being paid by the company.

The L. A. Dreyfus Co., Rosebank, Staten Island, New York, has begun the erection of a seven-story concrete addition to its present factory buildings, the new contruction providing for a 200 per cent increase in the company's output of rubber and gutta percha compounds. Completion is expected by July 1, 1926. Ellsworth B. Buck is president.

The crude rubber business heretofore carried on by Armand Schmoll, Inc., has been merged with that of Schmoll, Stiles, Reid, Inc., 41 Park Row, New York, N. Y. William Reid is president of the last-named organization.

The Crude Rubber & Foreign Produce Corporation, 250 West 57th street, New York, N. Y., announces that on and after February 1, 1926, the organization will be known as Henderson, Helm & Hammesfahr, Inc., with offices at 44 Beaver street, New York, N. Y.

The Truck-Bus Tire Service Corporation, 70 West End avenue, New York, N. Y., handles Firestone tires exclusively. J. R. McLaughlin is vice-president and general manager of the distributing organization.

After February 1, 1926, the Carlyle Rubber Co., dealer in rubber goods, will be located at 14-16 Vesey street, New York, N. Y.

Charles E. Wood, Inc., crude rubber broker, announces the removal of his offices to 25 Beaver street, New York, N. Y.

On January 1, 1926, the Schofield-Donald Co., 154 Nassau street, New York, N. Y., succeeded the L. H. Butcher Co., Inc., as agent for Typke & King, Ltd., Mitcham Common, England. Stocks of the English company's products will be carried in New York City, these including golden and crimson sulphides of antimony and rubber substitutes. The Canadian agent for Typke & King has also assumed the name Schofield-Donald, Ltd., instead of the former trade name of E. A. Schofield & Co.

The financial interests of The Gutta Percha & Rubber Manufacturing Co., 53 Franklin avenue, Brooklyn, New York, have been merged with those of the Hewitt Rubber Co., Buffalo, New York, and manufacture of the first-mentioned company's goods will be carried on at the Hewitt factory. Production by both organizations will, however, be kept entirely separate, and the Brooklyn company will have better facilities for expansion. At the reorganization meeting held in Buffalo, F. E. Miller was elected president of The Gutta Percha & Rubber Manufacturing Co.; John H. Kelly and Amadee Spadone were appointed vice-presidents; and W. J. Magee, secretary and treasurer.

The Meadowcroft Balloon & Airship Co.'s Plant

The Meadowcroft Balloon & Airship Co., Inc., Hammondsport, New York, was incorporated in January, 1925, and is now carrying on operations in a modern three-story factory, well equipped for the manufacture of pilot balloons, in which production the company specializes. Part of the concern's equipment was formerly the property of the Hadfield Rubber Co., which organization later became merged with the Lincoln Rubber Co.

Executives of the Meadowcroft Co., include the following: Norman Meadowcroft, president; Robert C. Turnbull, treasurer; and Willson R. Campbell, secretary. John Hadfield, who is the organization's adviser in rubber work, has had more than 27 years' experience in the industry, particularly in the manufacture of dipped goods.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware, announces the appointment of F. W. Wolff as sales manager of intermediates and rubber chemicals, and of W. W. Rhodes as sales manager of agricultural and miscellaneous chemicals. Both men have been associated with the du Pont organization for a number of years.

The Barber Asphalt Co., 1600 Arch street, Philadelphia, Pennsylvania, announces that it has taken over from the Aterite Co., John and William streets, New York, N. Y., the exclusive rights to manufacture "Aterite," a non-corrosive, acid-resisting, metallic alloy. The Barber organization will utilize this alloy in the production of valves, fittings and special castings, which will be manufactured at the company's Iroquois plant, located at Buffalo, New York.

On January 1 a consolidation was effected at Philadelphia, Pennsylvania, of the general branch in that city maintained by the United States Rubber Co. and the United States Tire Company's district headquarters, with Garfield List placed in charge of the consolidated branch. In addition, Mr. List, who has been connected with the organization for the past fifteen years, will continue his duties as district manager of the United States Tire Co.

For the year 1925 the net sales of the Carlisle Tire & Rubber Co., Carlisle, Pennsylvania, were in excess of $1,000,000. Charles S. Moomy is president and general manager.

The L. H. Gilmer Co., Tacony, Philadelphia, Pennsylvania, has taken over a number of unfilled contracts for small rubber belts from the United & Globe Rubber Co., Trenton, New Jersey, which concern recently went into the hands of receivers. These orders are principally for V-belts used in various household appliances.

Godfrey L. Cabot, Inc., 940 Old South Building, Boston, Massachusetts, has made arrangements with the Phillips Petroleum Co. for the construction of a carbon black plant for utilizing the gas at the last-mentioned company's plant at Eliasville, Texas. The Cabot company is also building near Caddo, Texas, another carbon black plant with a capacity of 8,000 pounds daily, and is planning to expand its production in Montana.

The Southern Tire & Rubber Co., Augusta, Georgia, reports that business during 1925 was the best in the company's history, not only in dollars and cents, but also in tire units, while the indications now are that the year 1926 will outstrip 1925. During January and February of the present year the company's plant has been running at capacity. Curtis E. Smith is vice-president.

The Kelly-Springfield Tire Co., 250 West 57th street, New York, N. Y., reports the opening of another branch, this latest division being at Charlotte, North Carolina, with C. H. Luebbert in charge. The new branch will take over territory formerly covered by the Richmond and Atlanta branches.

COCOA AND RUBBER EXCHANGE BEGINS OPERATIONS

On February 2 the first rubber exchange ever to be operated in the United States began business. The new organization, known as the Cocoa and Rubber Exchange, is located at 124 Water street, New York, N. Y., and it began operations with fifty-nine elected members.

The exchange was opened promptly at 10 A. M. by the secretary, R. Cross, who explained briefly the trading rules. Contracts were to be accepted for five ton lots (11,200 pounds) for the current month and to continue through fifteen months. Then by spreads of three months and later by spreads of six months.

A unique feature was the creation of a system of trading in "spreads" of months to permit of the hedging of parcels of rubber for serially monthly shipments over the four quarters of the year, or over semi-annual periods, beginning in January, April, July or October, to parallel the shipment periods current in the rubber trade. In conformity with the rubber world's standard practise, the unit of trading is five long tons. Each "spread" represents five long tons for each month of the "spread." Members of the new exchange include not only United States citizens, but some from foreign countries.

The Rubber Trade in New Jersey

The rubber manufacturers of New Jersey are now anticipating a good season after the severe winter months have passed, and already report an increase in orders not only for cord and balloon tires, but also all lines of mechanical goods. The busiest divisions at present are the hose, belting and packing departments. Hard rubber production is beginning to assume the normal state at this time of the year. Executives of the larger plants are frankly confident prosperity is just ahead, judging from present conditions. A reduction of 10 per cent in tires and tubes has been announced by tire manufacturers who state that no other drop is expected at this time. Manufacturers are apparently satisfied that present crude rubber stocks are sufficient for their needs.

The Murray Rubber Co., Trenton, New Jersey, has maintained a steady twenty-four hour schedule with three shifts during the past year. While Murray tires are comparatively new they enjoy a national reputation, being sold in nearly every state in the Union. In addition to tires, the Murray company is also a large producer of molded garden hose, fire hose, belting, packing, rubber bands and general mechanical rubber goods. The company has just finished a prosperous year and has orders on hand to guarantee maximum production for the first six months of 1926.

The Phelps Tire & Rubber Co., Garfield, New Jersey, is manufacturing 900 tires a day and is also installing new machinery to increase this output to 2,000 tires a day. The company states that last year's business showed a satisfactory profit, while indications are that the present year will represent an even greater unit production.

Demonstrations in the coagulation of rubber latex are being conducted daily at the New Jersey State Museum under the direction of Mrs. Kathryn B. Greywacz, the curator. The rubber exhibit, of which the latex demonstration is a part, will be continued for a month. At the same time there is a special exhibit pertaining to the life and industries of Liberia, Africa.

Whitehead Brothers Rubber Co., Trenton, New Jersey, reports that all departments are very busy with increased orders for belting, packing and hose.

Richard M. Jaeger, of 53 Hart avenue, Trenton, New Jersey, manufacturer of rubber mill machinery and rubber molds, is working on some good-sized orders and reports an increasing business.

C. Edward Murray, Jr., president of the Murray Rubber Co., Trenton, New Jersey, has gone to Florida to join his family for an indefinite stay.

The Combination Rubber Co., Trenton, New Jersey, announces an increase in orders, due to some extent to the fact that retail tire dealers are running low on stocks. The company has also increased production of balloon tires.

The Ajax Rubber Co., Trenton, New Jersey, is running 75 per cent. normal, and the officials are optimistic over the future prospects for a big spring trade.

The Thermoid Rubber Co., Trenton, New Jersey, reports a general business improvement in all departments.

George R. Cook, president of the Acme Rubber Co., Hamilton Rubber Co., and the Combination Rubber Co., Trenton, New Jersey, who died recently, left $10,000 each to Mercer, McKinley and St. Francis Hospitals at Trenton. He also left $25,000 to the New Jersey Children's Home at Trenton and $10,000 to the Camden, South Carolina Hospital. The remainder of his estate, which is valued at $3,000,000, is left to his widow and three children.

The Thermoid Rubber Co., Trenton, New Jersey, has discontinued its brake lining consumer price list, in effect for more than 20 years. The new trade or dealer list prices on Thermoid hydraulic permit customers to make even a longer profit by operating on a lower basis.

The Murray Rubber Co., Trenton, New Jersey, has filed suit

for $161,018.55 in the Mercer Supreme Court, against the City of Trenton and Mercer County, to recover damages said to have been caused by the overflowing of the Assunpink Creek which runs along its plant.

Rhode Island Notes

The Keds division of the National India Rubber Co., Bristol, Rhode Island, is now operating on a five day schedule, effective January 4, 1926. This department has been running only four days a week since August 1, 1925.

Henry L. Scott Co., Inc., 101 Blackstone street, Providence, Rhode Island, manufacturer of testing apparatus, etc., announces its incorporation and the dissolution, by mutual agreement, on December 31, 1925, of the earlier concern doing business as Henry L. Scott & Co.

The Kleistone Rubber Co., Warren, Rhode Island, organized in 1920, is one of the pioneers in the rubber floor tiling branch of the industry, the company also making a specialty of the manufacture of sponge rubber goods.

Among the latest improvements recently made at the Columbia Narrow Fabric Co., Shannock, Rhode Island, is an addition to the calendering department. Considerable new machinery has been installed in the addition, as well as in the other sections of the plant, replacing many of the older sets.

The Board of Contract and Purchase of the Cranston City Council has awarded contracts for 2,000 feet of double jacketed fire hose to the Combination Ladder Co., and to the Hope Rubber Co., both of Providence, Rhode Island.

The Rhode Island Rubber Co., 128 North Main street, Providence, Rhode Island, is being conducted by Isaac Cohen and Abraham W. Jackson.

Fire Chief Everett Griswold of the East Providence fire department is asking for 2,500 feet of new double jacketed fire hose to replace hose that is from 10 to 15 years old.

Louis G. Chase has filed a statement with the city clerk that he is the owner and conductor of the Union Vulcanizing Co., 18 West Exchange street, Providence, Rhode Island.

A special financial town meeting will be held at East Providence, Rhode Island, on March 9 at 10 o'clock when consideration will be given the making of an appropriation of $3,500 for the purchase of new fire hose.

The Rubber Trade in Massachusetts

With a 20-inch fall of snow in Boston within a week, what was destined to be a slack footwear season became the best in three years. While it is late for any large stocks to move from the factories to the retailers for this winter's consumption, retailers were in many cases caught short on some sizes, and emergency measures were adopted to keep them supplied. Airplanes were used by the United States Rubber Co., to make quick deliveries of automatic fastener gaiters from New England factories to New York City. Coming as it did just after the salesmen had started out to book orders for next winter's stock, the storm placed the retailers in a more favorable position, and bookings are expected to keep factories busy for some months ahead.

Prior to the arrival of snow, footwear factories which did not have a line of summer tennis to put into production were curtailing, one New England plant temporarily going on a four-day week schedule. Low priced gaiters, automatic fastener gaiters, and light rubbers of the new "fit-all" class have proved the big sellers. The snow will be very helpful in moving a larger volume of heavy goods, boots, lumbermens, and heavy pacs and gaiters in New England. Hitherto most of the business on this very profitable branch of footwear has been done largely in the Midwest.

Motor buses operated by the street railways and transportation companies proved more effective under storm conditions than trolleys, and this class of transportation was given much favorable comment by commuters, many of whom were marooned in Boston over night by the failure of the railroads and trolley lines.

Snow is a boon for the footwear trade but absolutely acts the other way for consumer business in tires and heels. Tire plants are busy, however, preparing for spring business. The heel and sole business seems to be going through the quiet season at top speed.

Many of the Massachusetts heel and sole plants such as Avon in Brockton; Quaboag, North Brookfield; Killion, Dorchester, are working overtime to complete their orders. Several new plants have begun operations, the Emery Heel Co., in the old Fellsway rubber plant on Locust street, Medford, and the Webster Heel Co., superseding the Pine Tree State Rubber Heel Co., Sabattus, Maine. Cobbler heel distribution is quiet at this season, most of the above output going to manufacturers of shoes.

The proofing business is turning out good volume, the Reading Rubber Co., Reading, Massachusetts, manufacturers of automobile topping, the Archer Rubber Co., Milford, Massachusetts, rubberizers of fabrics, and the F. S. Carr Co., Framingham, Massachusetts, carriage cloth makers, report record operations.

Mechanical lines, while not as busy as some of the other rubber lines, are enjoying good business. Reclaimers report no let-up in demand for their output which is sold well ahead. The Stedman Products Co., manufacturers of rubber tiling, South Braintree, Massachusetts, after an absence of several years from the reclaiming field, are producing a complete line of reclaims again. Freight tie-ups and embargoes due to heavy snow on the New Haven and Boston and Maine systems have hampered deliveries to some extent.

There has been a tendency to slow up in the tire industry toward the end of February. The weakness in the crude rubber market and the cut in tire prices February 3, combined with the complete lack of consumer business owing to the bad condition of the roads, has caused a let-up. One of the smaller plants has been shut down for six weeks.

The approval of plans for a five-story steel and concrete addition to the Firestone-Apsley Rubber Plant in Hudson, to cost $500,000, will double the output of this factory.

The Eastern Rubber Co., 72 High street, Boston, Massachusetts, wholesale rubber footwear jobbers in Boston for over eighteen years, will distribute exclusively Firestone-Apsley footwear in New England territory. Fred C. Miskelly is president.

William Sewall, formerly advertising manager and supervisor of the sales record department of the Converse Rubber Shoe Co., Malden, Massachusetts, has joined the Hood Rubber Co., Watertown, Massachusetts, where he will be on the executive staff of the tire sales division.

The E. H. Clapp Rubber Co., Hanover, Massachusetts, has made arrangements with the New York, New Haven, & Hartford R. R. for the loan of a steam locomotive which will be stationed on their siding and used to augment their boiler capacity during the present peak demand for reclaimed rubber products.

The New England Tire & Rubber Co., Holyoke, Massachusetts, makers of the "Holyoke Cord" have been petitioned into bankruptcy.

The Hood Rubber Co., Watertown, Massachusetts, has recently acquired more floor space for its New England tire sales branch, 595 Newbury street, Boston.

Henry C. Doyle, former assistant sales manager of the Converse Tire Co., Malden, Massachusetts, is now with the Boston branch of the Miller Rubber Co.

During the past six months the Cambridge Rubber Co., Cambridge, Massachusetts, has been making various additions to its

plant, the whole representing about 50,000 more feet of floor space, and an investment of approximately $400,000 for buildings, additional machinery and equipment. The organization specializes in rubber and canvas footwear, molded goods, and rubber clothing and fabrics.

The Rubber Trade in Ohio

Tire production in Ohio factories was considerably lower during February than in January, and was about 20 per cent below production in the same month of 1925. There was some improvement shortly after the first of the year but since then the tire production curve has been gradually downward.

In the Akron district tire output is now slightly under 100,000 casings a day, compared with between 120,000 and 125,000 manufactured at this time last year. The smaller companies have been hit harder than their large competitors, and those making tires exclusively are working only three or four days a week. Several of the big factories, like Goodyear, Goodrich, Firestone and Miller, are operating on reduced schedules. These concerns are in a better position to keep up production because of their ability to finance finished reserve stocks in warehouses.

The drop in production followed a slump in retail tire business in most sections of the country, due largely to uncertain price situation, and the ban placed on spring dating. Dealers have not bought as usual at this time of the year for spring requirements. They feared further price reductions and did not care to borrow money from the banks to carry stocks of high priced tires which might depreciate in value.

Another important factor was that automobile manufacturers stocked up fairly well during December, taking on contract the greater part of their January and February requirements, and they have been buying few tires recently for original equipment. Some improvement is looked for in the near future, however, because of the increasing automobile production.

It is not believed there will be any great improvement in tire sales until the spring motoring season gets under way and consumer buying begins to deplete dealers' stocks.

Conditions are almost the reverse in factories making rubber products other than tires. The demand for rubber footwear, hose, belting and other mechanical rubber goods has been and continues large, and production is keeping at high levels. Heavy snowfall this winter caused a big spurt in sales of footwear, which are surpassing those of last year. Prosperity in other industries all over the country has greatly stimulated mechanical rubber goods, and the growing popularity of rubber flooring has caused expansion in this business.

The B. F. Goodrich Co. exceeded all previous records in rubber footwear production this winter at its Akron plant. Demand for the "Zipper" boot, now made in a wide range of styles for men, women and children, was greater than could be supplied from current production, and for several months the company was behind on orders. During the peak of the season daily output reached more than 30,000 pairs of boots and shoes.

License to manufacture, sell and sub-license for use as a rubber vulcanization accelerator, resinous products similar to Vulcone has been granted to the Rubber Service Laboratories Co., Akron, Ohio, by E. I. du Pont de Nemours & Co., Wilmington, Delaware. United States patent No. 1,571,739 covering hard resinous accelerators and the process of making them was granted to Winfield Scott, February 2, 1926, and assigned by him to the du Pont company.

An expansion program which has involved the expenditure during 1925 of $100,000 has been completed by The Falls Rubber Co., Akron, Ohio. Additional equipment includes new conveyer systems, and new machinery for tire building and bead making. The company specializes in the production of heavy duty tires and Evergreen inner tubes. W. S. Campbell is sales manager.

The construction of an addition to its present reclaiming plant that will increase the output of reclaimed rubber by 50 per cent is announced by the Goodyear Tire & Rubber Co., Akron, Ohio. Plans include the completion of this enlargement during May, while other new constructions will be represented by increases in the present blacksmith shop facilities, as well as improvements in the company's system of water conservation.

The Rubber Recovery Co., Akron, Ohio, has purchased the plant in East Akron formerly occupied by the Phoenix Rubber Co., and is now installing modern equipment for rubber reclaiming purposes. Production began about March 1 with an initial capacity of ten tons a day, the output to be increased as business warrants. Executives of The Rubber Recovery Co. include: E. H. Trump, president; F. G. Alderfer, Jr., vice-president; Willis Bacon, secretary; and R. M. Trump, treasurer.

The Goodyear Tire & Rubber Co., Akron, Ohio, reports that William Stephens, general superintendent, has recently completed twenty-five years in the service of the organization. Beginning in 1901 with an inconspicuous line of work, he was advanced in 1912 to the post of division superintendent and in 1920 to his present position.

Lynn Harvey, divisional sales manager for the India Tire & Rubber Co., Akron, Ohio, will spend two months on the Pacific Coast, while J. B. Mills, special factory representative, left on February 1 for Cuba. The work formerly handled by Mr. Mills will be taken over by J. N. Dunlevy, who joins the organization as advertising manager.

Operations are soon to begin at the plant of the McKinley Rubber Co., 2422 Tuscarawas street, Canton, Ohio, the following having been recently chosen as executives of the organization: C. S. Moon, president; C. O. Sipe, vice-president; and T. P. Paxon, secretary and treasurer. The company will specialize in rubber reclaiming, and will utilize a process patented by Mr. Sipe.

The Pharis Tire & Rubber Co., Newark, Ohio, is now occupying a new two-story addition, measuring 80 by 110 feet, and constructed at a cost of $85,000. With increased facilities offered by this building and others in course of erection, the company will increase its production by about 50 per cent, the daily output on March 1 being approximately 3,500 tires and the same number of inner tubes. Carl Pharis is general manager.

Improved equipment and a large increase in sales during 1925 are reported by The Pioneer Rubber Co., Willard, Ohio, the figures including profits before deductions of $100,000. On October 19, 1925, the Pioneer organization purchased the stock and entire equipment of The Triangle Sporting Goods Co., and added the production of baseballs to its former lines of manufacture. The following executives were recently reelected: T. W. Beelman, president; J. C. Gibson, vice-president and general manager; R. K. Williams, secretary; and K. L. Milligan, assistant sales manager.

Between 650 and 700 tires a day are now being manufactured at the plant of The Monarch Rubber Co., Canton, Ohio. Since October 1 last the output has averaged more than 500 tires daily.

The Firestone Tire & Rubber Co., Akron, Ohio, will construct a fabric warehouse, adjacent to the company's No. 1 plant, to cost between $175,000 and $200,000. The building is to be 120 by 150 feet, four stories high and of the most modern construction.

C. A. Capron and E. E. Davison of The B. F. Goodrich Co., Akron, Ohio, have been sent to the company's factory in Hannover, Germany, to assist in the reorganization and improvement of the plant.

The effect of crude rubber restriction is reflected in the annual report of the Northern Rubber Co., Akron, Ohio. The report shows that while the company operated at a gross profit of $38,355.30 last year, its net profit was nothing. The daily tire unit sales were 200. Like other small tire factories rubber was purchased only as needed and the rise in crude rubber seriously hampered progress. The company hopes to increase its capacity to 300 units daily, a 50 per cent expansion.

At the suggestion of Rear Admiral W. A. Moffett, chief of the United States Naval Bureau of Aeronautics, plans for a ship intended to be the world's greatest aerial battleship have been under headway by experts of the Goodyear-Zeppelin Corporation, subsidiary of the Goodyear Tire & Rubber Co., Akron, Ohio.

The new air cruiser would be 790 feet long, 135 feet in diameter, with a helium gas capacity of 6,500,000 cubic feet, double that of the Shenandoah or the Los Angeles. The motors would develop 4,800 horsepower and a speed of ninety miles per hour, with a cruising radius of 5,000 miles. Half a dozen pursuit planes capable of developing a speed of 175 miles per hour would be carried on the ship. The Goodyear-Zeppelin Corporation recently announced plans for a 5,000,000 cubic foot Zeppelin, and for a 1,125,000 cubic foot training ship.

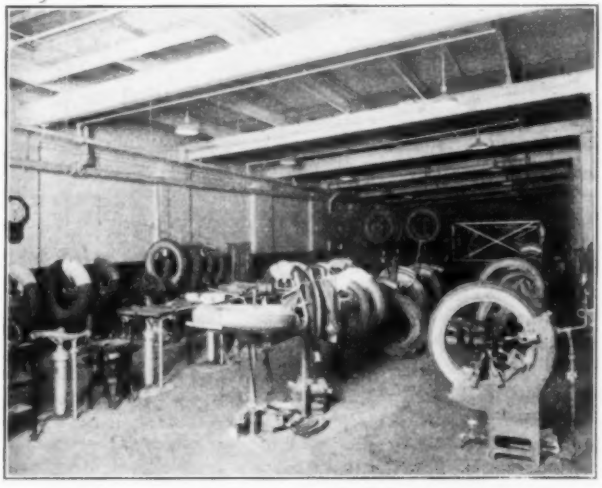
The sales of the Wayne Tire & Rubber Co., Orrville, Ohio, have been assumed by the Miles Rubber Co., Akron, Ohio. The Wayne factory has a daily capacity of 3,000 tubes, a specialty being made of a quality gray tube.

The Firestone Tire & Rubber Co., Akron, Ohio, expects by the end of this year to have between 20,000 and 25,000 acres of land in Liberia cleared for rubber cultivation. At present between 4,000 and 5,000 negro laborers are being employed in this work. Between forty and fifty men recently left the United States for Liberia, and it is said that later more men will be added to the force.

The growing popularity of the balloon tire and the high price of rubber have played an important part in renewing interest in tire repairing.

A few years ago tire manufacturers conducted training schools for dealers on tire repairing, but these were discontinued as tire mileage standards were increased and tire prices remained at low levels.

But the pendulum now has swung in the other direction, not in the matter of tire quality, but in price. Consequently interest in repairing comes back and The B. F. Goodrich Rubber Co., Akron, Ohio, has revived its repair school to give dealers and repairmen timely instruction on the care and repair of balloon tires.



The New Goodrich Tire Repair School, Akron, Ohio

Conservation also is the cry of the hour because of excessive rubber costs. It is evident that only through a thorough knowledge of tire care can conservation be efficiently effected, and tire dealers and repairmen are the logical ones to disseminate this information to the consumer and make a broad program of conservation effective.

Reclaimers Increase Production

Rubber reclaiming plants in Akron, as well as in other parts of the country, are expanding to such an extent that production will practically be doubled within the next few months. Increases in output have been announced by the Philadelphia Rubber Works Co., the Goodyear Tire & Rubber Co., Firestone Tire & Rubber Co., Akron Rubber Reclaiming Co., Miller Rubber Co., and the Rubber Recovery Co.

The Akron Rubber Reclaiming Co., which was organized two years ago, has called a special meeting of stockholders to approve an increase in capital stock from $500,000 to $1,000,000. It is planned to buy additional machinery so that the output may be doubled to meet the present urgent demand from the industry. Guy M. Wyatt has succeeded C. E. Bishop as factory superintendent. B. O. Etling is president and treasurer.

Tire Prices Reduced

Following the sharp drop in crude rubber below 65 cents a pound, compared with $1.10 two months ago, United States and Firestone companies announced price cuts of 3½ to 12 per cent in tires February 4. All other companies quickly met the reduction. The manufacturers at the same time announced that dealers would be protected until July 1 on spring stock orders against possible losses due to further reductions.

So far, however, the first price cut and the protective policy have failed to stimulate retail business. If rubber stays below 65 cents, or goes down further, it now appears likely that another price reduction will be made by the manufacturers during March.

Advent of Second Grade Tires

Akron tire manufacturers are preparing to speed up sales of so called "second grade" casings to meet competition of "gyp" manufacturers and mail order firms. While these tires are not as serviceable as the standard advertised ones, they meet the requirements of a motorist who desires a "cheap" tire of fairly good quality. The purchaser is assured that by dealing with a legitimate manufacturer he is certain of realizing the worth of his money in tire mileage.

The B. F. Goodrich Co.'s Radio cord tires, formerly manufactured only in the 30 x 3½ size, can now be had in all the standard sizes, including balloons. The tires are priced so that dealers can make a fair profit and yet undersell large mail order houses. The Goodyear Pathfinder line which is in the same field as the Goodrich Radio is in good demand. Designed in the first place for small cars, the Pathfinder is supplying the needs of all car owners. The United States Rubber Co. also has increased its line of medium priced tires and the company's dealers are now prepared to face competition.

Midwestern Notes

Production at the plant of the Century Rubber Works, 54th avenue and 18th street, Chicago, Illinois, now averages 2,280 casings daily, the output during January, 1926, being 53.5 per cent greater than for the corresponding month of 1925. Following the installation of a larger power plant, the company expects to raise its factory production to 3,500 tires daily. Business during 1925 increased 65.3 per cent over that of 1924. William L. Burgess is manager of sales.

The Alliance Rubber Producing Co., New York Life Building, Kansas City, Missouri, is capitalized at $250,000 and has been organized for the purpose of manufacturing mineral and synthetic rubber, and their by-products, and also reclaiming scrap rubber. The new concern, which will carry on a wholesale business, has also taken over the refinery formerly maintained in Kansas City by the American Gasoline Corporation. Under the new arrangements the company's plant capacity will be 100 tons a day.

R. C. Ehrlich as representative of The Republic Rubber Co., Youngstown, Ohio, will travel the states of Arkansas, Oklahoma,

Mississippi, Tennessee, and Missouri. J. V. Wedgwood has been appointed district manager for the Chicago territory.

Since its establishment in 1921, the Corduroy Tire Co., Grand Rapids, Michigan, has maintained its record of constructing each year some addition to its plant. The present enlargement, shown in the illustration, will enable the organization to double its factory output, and will necessitate adding materially to the number of employes. The company is now producing four types of cord tires, the Universal balloon, Truck-Bus, Universal high pressure and the Super-Duty, as well as a complete line of Rimside Protection tubes, both grey and red. Balloon tires, of the Universal type, have been manufactured since October 1. P. W. Nickel is in charge of the company's publicity and advertising department.

J. A. McGrath, for eleven years identified with tire manufacture in the middle west, has been recently appointed tire room superintendent.

The Overland Trail Rubber Co., Omaha, Nebraska, reports that the company's total sales for the first eleven months of 1925 have amounted to $1,794,803.35, while net profits for this period reach $108,685.98. At the recent annual meeting of the organization the following officers were elected: G. M. Tunison, president; Carl Sonderegger, vice-president; and Mark C. Losch, secretary. The present treasurer, J. H. Davies, will continue in office until further order of the board of directors.

Plant of the Corduroy Tire Co., Grand Rapids, Michigan

The Rubber Trade on the Pacific Coast

The marked reduction in tire prices announced early in February by leading tire manufacturers enlivened what promised to be a somewhat dull month in the rubber trade on the Pacific Coast. Sales of casings and tubes were quickly stimulated, waiting dealers being assured that no further price concessions were likely for a few months unless an improbably large drop occurred, not only in rubber but also in cotton and other materials. Makers of repair materials report no falling off in the large sales that they have been making for several months; and tire makers are hesitating about following the example set by eastern and mid-western manufacturers until the effect of the reduction can be studied. Distributers of rubber footwear have been much encouraged by the rainy weather and, as stocks are very low, some large orders are likely to be booked this spring. Trade in mechanical rubber goods is very fair, and in druggists' sundries there was a noticeable spurt during the month. A considerable improvement in all lines is confidently expected for March.

The Goodyear Tire & Rubber Co. of California will lose nothing through the defalcation of the treasurer, William F. Downs, now held in default of $25,000 bail at the Los Angeles County jail. The loss, estimated at $150,000, is covered with policies of the National Surety Co., the United States Guaranty Co., and Lloyd's. Downs was with the accounting force of Goodyear's in Akron from 1916 to 1919, when he went to the Goodyear plant in Los Angeles. He was appointed treasurer in November, 1925, succeeding M. S. Kelly, resigned.

Average daily tire production for February at the Goodyear Tire & Rubber Co. factory in Los Angeles, California, was 7,000, and of tubes 8,500. The plant is operating at full capacity, spring orders accounting for much of the activity. Instead of the usual spring dating, the company allows deferred payments until May 10 on all orders booked in February. Another factor in stimulating business was the Goodyear cut in tire prices of from 7½ to 10 per cent in February. The company has been doing a large business in repair materials and various automobile accessories. The Goodyear Textile Mills, adjoining the tire plant, are now producing 4,500,000 pounds of fabric annually. The mills use the entire output of Pima cotton from the Goodyear plantations in Arizona, and also purchase a considerable amount of Egyptian long staple and southwest Acala cotton.

Motor car dealers' associations on the Pacific Coast have entered into the nation-wide campaign to conserve automobile tires in the hope of lowering the cost of crude rubber. Members send letters to their customers urging their cooperation and telling them how they can get more mileage from casings and at the same time do the trade and nation a service.

According to Vice-President and General Sales Manager Alfred A. Aya of the Columbia Tire Corporation, Portland, Oregon, business so far this year has been larger than anticipated; and to meet increase in orders several extensions have recently been made to the plant and additional equipment installed. The factory will be soon producing 750 tires daily.

Creditors of the Sound Rubber Co., Tacoma, Washington, have been advised that a specific order for the sale of the company's property is likely to be issued shortly by the Superior Court. Several efforts have been made to form a new corporation to take over the business and to fund the debts of the old concern.

Preparations are being made for the annual golf tournament of the Pacific Coast Mechanical Rubber Men which will be held in September in Los Angeles, California.

The 1925 sales volume and production of The Spreckels "Savage" Tire Co., San Diego, California, was the largest in the company's history, approximating 300,000 casings and 400,000 tubes. Inventory of January 1, 1926, showed the smallest stock on hand since 1914. The plant is running 24 hours a day on heavy duty cord

casings for passenger cars, trucks, and buses, a standard balloon cord, a medium cord, and gray and red tubes. It is also bringing out a popular-priced tire for light and medium weight passenger cars. The president is John D. Spreckels, and the general manager L. D. McConnell.

A better and more modern plant is to be rebuilt by the Plant Rubber & Asbestos Works, 537-539 Brannan street, San Francisco, California, to replace the one destroyed by fire at Redwood City, California, January 23. The new factory is expected to be in operations by June 1. Officers of the concern are: president, Sydney L. Plant; first vice-president, Charles A. Wright; second vice-president, Milton S. Sprague; secretary and treasurer, E. H. Pierce; and assistant secretary, S. J. Gillis.

The Goodwin Chemical Co., Long Beach, California, will build a plant for the manufacture of carbon black for the rubber and other trades. Natural gas will be obtained from the Signal Hill oil field at Long Beach. A well-equipped laboratory will be placed at the disposal of rubber technicians, as the company intends to make research work second only in importance to production.

Solid tire production is the newest development in the Pacific Coast rubber industry. The Long-Turney Corporation, 1920 East Vernon avenue, Los Angeles, California, has installed equipment for the making of seven sizes of solids ranging from 34 by 4s to 40 by 7s. Provision will soon be made for manufacturing other sizes also. The company, of which G. S. Long is president, also manufactures retread stock, rubber-faced pulleys, battery jars, and various mechanical rubber goods.

Heavy exports of rotary hose with special couplings and various rubber supplies for oil fields in South America, the West Indies, and Europe are reported by the West American Rubber Co., 400 North Avenue 19, Los Angeles, California. The company makes "Whaleite" packing for mud pumps, and also other mechanicals.

The plant of the Reilly Rubber Co., 2432-34 East 56th street, Los Angeles, California, is no longer in operation, its owner, J. R. Reilly, having gone into other business.

A brisk trade is reported by the Burton-Wade Rubber Co., Inc., 1920 East Vernon avenue, Los Angeles, California, manufacturer of blow-out shoes, reliners, and various automobile accessories. Burton F. Wade is president.

The V-T Rubber Co., 970 South Alameda street, Los Angeles, California, manufactures camelback and other repair stocks as well as some other rubber goods. The business is conducted by W. J. Voit, former vice-president of the Eno Rubber Co.

In a new and well-equipped factory at 4502 Melrose avenue, Los Angeles, the Coraja Rubber Co. is doing a good business making repair materials, blow-out shoes, and various automobile accessories. Ralph I. Guy is president; L. B. Rice, vice-president; and A. W. Hamm, secretary and treasurer.

The Rubber Trade in Canada

Reductions up to 12½ per cent have been made in tires and tubes by Canadian manufacturers. If cotton prices break, it is probable that a still further reduction in tire prices will be made. Price reductions will also extend to belting and other rubber products, although new lists have not been issued.

The price of rubbers has advanced considerably in the past twelve months. In March of last year the jobbers' list for women's rubbers was 70 cents. It went to 77 cents and then to 90 cents but dealers are still buying at 75 cents. Men's rubbers, listed at $1.18, are being jobbed as low as 85 cents.

The consensus of opinion is that Canada is due for a boom in trade; however, until it is known which political party will govern the country, there will be a certain amount of doubt. Everything points to more industrial development and the building industry promises to be very active.

The Kaufman Rubber Co., Ltd., Kitchener, Ontario, was among the firms exhibiting in Winnipeg, Manitoba, recently at the Winnipeg Commercial and Industrial Exhibition.

The Canadian I. T. S. Rubber Co., Ltd., West Toronto, Ontario, recently opened a Pacific Coast branch in Vancouver, British Columbia, under the managership of John M. Adolph.

Following a number of get-together meetings of prominent tire dealers in Vancouver, Calgary, Edmonton, Regina, Saskatoon and Winnipeg, appointments were made with tire manufacturers and representative dealers from Toronto, Ottawa, Hamilton, Quebec and Montreal to discuss measures for bettering the tire merchandising situation. As a result of the general meeting all tire manufacturers are reported as having decided, through their various field organizations, to tackle the evils which have prevented dealers getting a fair mark-up on their goods and to assist further in clearing the decks for future businesslike tire merchandising methods.

To facilitate a reorganization of the Gregory Tire & Rubber Co., Port Coquitlam, British Columbia, the assets and undertakings of the company will be sold to satisfy a debenture indebtedness of approximately $121,000.

Plans are said to be under way for the organization of a rubber dealers' section of the Retail Merchants' Association of Canada, the purpose being to adopt improved business methods and merchandising proposals. It is anticipated that this will result in a decided change for the better in the retail rubber trade.

The Goodyear Tire & Rubber Co. of Canada, Ltd., New Toronto, Ontario, has recently opened a tire repair school, in which tuition is free, for the benefit of all experienced or inexperienced repairmen.

W. H. Miner, president of the Miner Rubber Co., Ltd., Montreal, was recently elected a member of the Council of the Montreal Board of Trade.

The Canadian I. T. S. Rubber Co., Ltd., has erected a large addition to the plant in West Toronto, Ontario.

The Goodyear Cotton Company of Canada, Ltd., a subsidiary of the Goodyear Tire & Rubber Co. of Canada, Ltd., has made an offer to purchase the Canadian Manhasset Cotton Co., Ltd. of Canada and a meeting of the shareholders of the latter concern has been called to consider the proposal. The directors have approved the proposal and will recommend its acceptance to the shareholders. The price of consideration will be $300,000 first mortgage 6 per cent bonds and $475,000 of 7 per cent cumulative preferred stock of the Goodyear Cotton Company.

Annual Dinner of the Rubber Association

The annual banquet of the Rubber Association of Canada was held at the Mount Royal Hotel, Montreal, on the evening of Thursday, February 11. J. D. Hathaway, president of the association, and toastmaster, addressed the guests briefly on the rubber situation. Dealing with general business conditions, he said it was safe to assume that the year 1926 would be one of prosperity for Canada, with a rising volume of business throughout the year, and the peak still ahead.

Sir Henry Thornton was introduced by W. A. Eden, who sketched the career of the head of the National Railways system, and declared that, not content with resting upon his laurels in England, he had tackled "the toughest job in the British Empire."

Those at the speakers' table were: J. D. Hathaway, W. G. Miner, C. N. Candee, C. H. Carlisle, W. A. Eden, Sir Henry Thornton, Jos. O'Mara, E. W. BeSaw, T. B. Tomkinson, F. Freudeman, Rev. G. R. Allan, A. L. Viles, J. Westren and J. C. Weston.

Paramount International Not in Liquidation

The Paramount Rubber Consolidated Co. of Canada, Sherbrooke, Quebec, has no connection in any way with the Paramount International Rubber Co., of Canada, Ltd., Farnham Quebec, a going concern. C. H. Stanyon is general manager of the latter organization.

The Rubber Trade in Europe

Great Britain

THOSE who are studying the problem of rubber production during the present year believe that conditions in the industry represent a reversal of those which have prevailed during the past ten years. The question is no longer one of over-production, but instead it is a matter of keeping pace with the steady growth of consumption. In forecasting the output for the present year the deciding factor as to what proportion can be put upon the market is the ability of the plantations to make good the labor shortage that has resulted from the heavy reduction of the hands employed during the slump period. At the present time a boom in tin is coinciding with the recovery of rubber and is calling for many employes. It is therefore reasonable to assume that the increase in rubber production will be neither rapid nor substantial for some time to come. On the other hand, the demand for rubber is increasing very rapidly all over the world.

The Weekly Economist (London) deplores the fact that British opinion regarding the rubber situation is not as cordial toward America as it might be, and also expresses the belief that the exportable quotas of rubber under the Stevenson scheme might have been increased more rapidly in 1925 with advantage. According to this periodical, however, it was not restriction which drove up prices or caused the demand suddenly to outrun production, but the real difficulty has been the seven years' gap between the planting and tapping of rubber trees, and also the motor boom which has been so extreme that in no circumstances would it have been possible for the rubber industry to be enlarged in order to cope with the situation.

Hoover Campaign Criticized

It is only natural that the British public as well as the periodicals of the country should watch with interest Mr. Hoover's endeavors to enlist American sympathies against the English rubber "monopoly," while this same public has also noted the space given to accounts of this government interference by newspapers and periodicals the country over.

The rubber controversy has also been of enough importance to elicit a reply from Sir Esmé Howard, British Ambassador to the United States, who in a recent address before the Advertising Club, New York City, admitted that rubber prices had reached very high levels during a few months of 1925, but that the average for the past five years had been approximately only 32 to 33 cents. Claiming that the law was not discriminatory, Sir Esmé concluded by appealing to both sides not to embitter the present controversy.

Declaring that the British point of view is now receiving careful consideration from leading American interests, H. Eric Miller, at a recent meeting of the Langen (Java) Rubber Estates, Ltd., said in part:

I wonder if Mr. Hoover realizes the extent to which his agitation helped to force up the price of rubber against the buyers? Speculators cannot be excluded, and they are responsible for exaggerating the market tendency either upward or downwards, as the case may be. It is quite impracticable to carry on an industry efficiently through the medium of publicity of this kind, and, on the whole, I think America may be thankful that the reaction from the recent high price level has come about so soon. Calm counsel will, however, govern the policy which is ultimately followed.

British Organizations Protest Against Restriction

The automotive industry of Great Britain continues to express its dissatisfaction with rubber restriction measures, the following organizations having recently combined in the issuing of a manifesto: Royal Automobile Club, Commercial Motor Users' Association, Motor Manufacturers and Traders, and the Cycle, Motor Cycle and Traders' Union. The protest states:

We feel the time has come when the public should be informed of the consequences already apparent and which must only too unfortunately be aggravated if the artificial restriction of supplies of raw rubber is to continue. . .

It is necessary in the interests of all purchasers and users of commodities of which rubber forms a part, to emphasize that the object of what is known as the Stevenson restriction scheme was to create an economic price, and its present results, which are accentuated every day, leave no doubt whatever that its consequences are to create an uneconomical price for tire equipment for every type of road vehicle.

Institution of the Rubber Industry—Other Organizations

On February 1 a meeting was held of the London Division of the Institution of the Rubber Industry, the chief paper on this occasion being read by Colin Macbeth, chairman of the Birmingham and District Section. Mr. Macbeth took as his subject "A Comparison between British and American Manufacturing Methods." The Birmingham Section held its annual dinner on February 8 at the Queen's Hotel, Birmingham.

The City of London College, London, E.C., has been giving a series of twelves lectures on the subject of rubber. George Rae, of Harrisons and Crosfield, Ltd., has been in charge of this course, and has been taking as his subject "A Survey of Rubber Production and Consumption."

Beginning January 20, a special short course of lectures on the subject of rubber technology is being carried forward at the Northern Polytechnic Institute, Holloway Road, London, N. The course, comprising eleven lectures, followed by practical work, is being given by C. H. Birkitt.

Michelin to Build Factory in England

After inspecting various sites, the Michelin Tire Co. has decided to build at Stoke-on-Trent an English branch factory, the new construction to cost approximately £500,000. The property has an extent of nearly 200 acres, and it is understood that, when completed, the plant will employ from 8,000 to 10,000 workpeople.

British Notes

Lydbrook Cables, Ltd., has been formed for the purpose of manufacturing insulating materials, india rubber and gutta percha, vulcanizers, and various types of electrical equipment. The registered office is in Lydbrook, Gloucestershire.

The Sponge Rubber Seat Co., 7c Lower Belgrave street, Victoria, S. W., will continue the business formerly maintained by the International Rubber Manufacturing Co., Ltd., of preparing rubber for use in the upholstering and fitting out of motor vehicles, omnibuses, etc.

Official returns regarding unemployment in the rubber industry have shown a considerable decrease, the figures on December 21, 1925, being 8.4 per cent, as compared with 9.6 per cent for the month previous, 12.1 for the year before, and 12.6 per cent for the corresponding date in 1923.

The directors of the Kalidjeroek Rubber Co., Ltd., have declared a second interim dividend of 20 per cent (less tax), making 30 per cent to date for the year 1925-26. In 1924-25 there was an interim of 10 per cent, followed by a final one of 15 per cent, making a total of 25 per cent. Other organizations declaring large dividends also are the Kepong (Malay) Rubber Estates, Ltd., 37½ per cent for the year ended December 31, 1925, and the United

Serdang (Sumatra) Rubber Plantations, Ltd., 25 per cent for the year (less tax).

George Hankin & Co., 21 Mincing Lane, London, E.C. 3, crude rubber brokers, announce that William Boyd Stocker, for many years connected with their organization, has been admitted as a partner in the firm.

The latest London fad is spats made of rubber. They fit well over shoe and ankle, are easily cleaned with a damp cloth, and come in various shades of grey and fawn. The surface is finished to simulate ribbed fabric, and it is claimed that they can hardly be distinguished from the usual cloth spats, as far as appearance is concerned.

France

During a recent session of the Chambre des Deputés (Chamber of Deputies), the development of the rubber industry in the French colonies came up for discussion. M. Guerin pointed out that the output of rubber could have been increased if the industry had received more encouragement from the government and if capitalists had been less reluctant to invest money in rubber plantations. In Madagascar there were large numbers of Hevea trees but these were scattered and, therefore, only those easily accessible were tapped. In 1924 only 38,000 kilos of rubber, of good quality, had been collected. With a little exertion ten times as much could be obtained. He is led to question whether people really wish to increase the output of rubber and whether the Stevenson scheme has not inspired French planters with the idea of voluntarily cutting down yields in order to make more money.

If France did something to encourage planting in her colonies, she would easily find the 38,000 tons which she needs for her own consumption. At present the factories in France are capable of supplying all France's needs of rubber goods.

He concluded by asking whether the government was content with the slow development of the rubber planting industry in French Colonies, or whether they intended taking steps whereby France's rubber requirements would be assured, and whether intensive cultivation on as extensive a scale as possible would be favored, so that France could get her rubber at a fair price.

Belgium

In their annual review of the crude rubber situation, Messrs. Grisar & Co., Antwerp, Belgium, state that importations from the Congo were 405,825 kilos of wild rubber during 1925 against 399,182 kilos in 1924, while plantations came to 255,863 kilos against 190,770 kilos in 1924, in all 661,688 kilos and 589,952 kilos for 1925 and 1924 respectively.

On the basis of values for Standard Sheet available at the end of December, the Congo values were as follows:

	End of December	
	1924 Francs	1925 Francs
Kasai red and black I	12.75 to 13	33
Kasai, Sankuru-Loanda II	11. to 11.15	26
Upper Congo black	13. to 13.60	33.25
Upper Congo Aruwimi	12.75 to 13.10	27.25
Upper Congo ordinary red	11.75 to 12	31.60
Hevea, plantation sheet	18d	47½d
Hevea, plantation scraps	11.75 to 11.85	27.10

The quality of the wild rubber received from the Congo during the year was excellent, but unfortunately in spite of the high prices prevailing throughout the year it was impossible to effect any appreciable increase in importations as the natives could not be induced to take up rubber collecting to any extent. The natives are at present given to harvesting other products which require less fatiguing labor than rubber and are not at all disposed to listen to propositions involving the gathering of rubber.

The plantation grades of Congo rubber are equal to the best kinds of eastern plantations as far as quality is concerned, but the preparation still leaves much to be desired.

Germany

The Leipzig Chamber of Commerce reporting on conditions in the rubber industry in Saxony states that while prices for crude rubber, despite the recent decline, continue high, selling prices are still bad, owing to extensive over-production in Germany and the invasion of German markets by foreigners. America, particularly, is said to be especially active in throwing on the German market products at extraordinarily low prices. Unfavorable economic conditions adversely affect sales and payment difficulties have increased considerably. Most of the factories have had to dismiss more workers and are working on a part time basis. No improvement in the export situation is noted. It is hoped that business will look up during the year just begun, but improvement is not expected before April, 1926, as the new season will probably start late since dealers began the new year with fairly heavy stocks.

The elastic-webbing industry in the Wuppertal has for some time past reported unfavorable business owing to over-supply and the difficulty of getting orders. It is not thought likely that the situation will improve soon seeing that the industry is confronted with numerous difficulties. The new high duties imposed by Spain on German goods practically prevent the exportation of certain articles. This is a particular hardship as Spain formerly bought large quantities of goods from the Wuppertal.

Like the other branches of the rubber business, this branch too suffers from the inability of persons to meet their obligations. Considering all things, most manufacturers here take a grave view of the immediate future.

In a review of the crude rubber market during 1925, the *Gummi Zeitung* naturally touched on restriction and the high prices resulting therefrom. In this connection, it calls attention to a development of the situation created by these high prices, namely the desire of many rubber manufacturing countries to free themselves of England in the matter of crude rubber supplies. Thus America is planning to grow rubber in Liberia and extend and add to concessions in the Dutch colonies. France is anxious to increase her plantations in Indo-China and Africa so as to be able to cover her needs in her own colonies and both Russia and Sweden are working on schemes to start plantations of their own.

German Company Notes

Firma "Erosa" Gummiwerke Grauding & Co., G. m. b. H., Reinbek, has been declared insolvent.

The firm of A. Friedländer & Co., Berlin S. O. 33, is the inventor of a preparation "Gummiwohl," which is said to increase the durability of tires and tubes by at least 40 per cent. The concern intends putting the article on the home and foreign markets.

Austria

The *Gummi-Zeitung* learns that conditions in the Austrian rubber industry are not favorable. Factories have less to do since exports to Hungary and Poland have become almost impossible. The increase in duties in Germany has created new difficulties for the Austrian exporters. Home consumption is adversely affected by the economic crisis which is steadily becoming more pronounced. Unemployment is daily increasing which in turn further reduces the buying capacity of the people.

Rubber dealers complain about the hard conditions which the rubber manufacturers are imposing. As a matter of fact, this attitude of manufacturers is to be welcomed and it is only regrettable that it was not adopted sooner, for the easier terms made for laxity among jobbers and dealers and led to many avoidable bankruptcies. A firm stand in the matter of payments may create difficulties at first but if business is to recover they must be endured.

The crisis claims new victims every now and again, the latest failures recorded being that of Moritz Berger & Co., manufacturers of rubber goods, and of the Guwak Gummiwarenkompagnie Pohnitzer & Redlich.

The Rubber Trade in the Far East

Malaya

THE drop in the price of rubber is naturally calling forth comment, although it should be said that thoughtful people here have not been taken by surprise, as ups and downs were looked for. As the *Straits Times* points out, prices went higher than the situation warrants. There is at present no actual shortage and no reason for believing that there will be in the very near future, in fact at any time during 1926. A good deal of the recent buying was scare buying induced by nervousness as a result of the very low stocks in London. The important question is how much of the rubber bought since the end of June has been consumed and how much has been hoarded either in a raw condition or converted into tires.

The year 1926 opens very differently from 1925. In 1924 short buying to force down prices was the rule. London and American stocks were very low and the restriction area was on a 50 per cent basis of production. The present year, however, starts with larger stocks and with production practically at full standard. The question is now whether stocks in America, raw or manufactured, are more than they should be and whether American banks have reason to be anxious. In any event, producers must be prepared to see prices drop from their recent high level. However, if they proceed prudently there should be no cause for anxiety. Even if the temporary boom disappears, there are good reasons for believing that it will return despite all talk of regenerated rubber.

America and Rubber Prices

The publication of American utterances on the subject of high rubber prices and reprisals has moved many pens of late and local papers give full expression to the feelings aroused by America's attitude.

The Malayan Tin & Rubber Journal indignantly asks: "Did the American users of raw rubber—our good friends of Akron where Mr. Longworth has been spouting—offer us the slightest help or even sympathy during the great slump in the price of rubber when the producers were on the verge of bankruptcy and, indeed, when many growers, both large and small actually were ruined? They did not. They were callously indifferent to our fate. If they had offered to buy our rubber at a shilling a pound we would have blessed them. . . . . Cheap and yet cheaper rubber was all the American manufacturers cared about and their selfishness, as selfishness usually does, has now recoiled on their own heads."

The *Straits Echo* contrasts the stoicism and fortitude with which the British taxpayer is shouldering the burden of the war debt with the attitude of a section of the American press and public men towards Great Britain in regard to rubber prices. It is particularly surprised that Mr. Longworth, as the son-in-law of President Roosevelt, should have indulged "in such ridiculous Anglophobe flapdoodle as he is reported to have ladled out to his audience at Akron." If the reasoning of American financiers and business men were generally adopted diplomats might find the scope for the exercise of their gifts extending until it included the whole range of international trade. Finally the present agitation is regarded as partly a kind of business bluff and partly "the outcome of the Anglophobia which is always latent in certain sections of the American public."

The *Straits Times*, on the same subject, expresses the right of each independent, self-respecting nation to manage its affairs in its own way and will brook no dictation about rubber by America of all countries, than which none is more ready to protect her own interests. Fortunately it realizes that "screaming self-advertisers do not constitute the whole of America" and it has "found in the more honorable and responsible section of the American press views on the rubber situation as sane and moderate as are to be found in any British journal." There is no objection to American rubber planting. But it would point out the special hazards and demands of the rubber planting industry.

With regard to the slump, Americans displayed no foresight and are now suffering accordingly, and will suffer more when the real scarcity comes. As long as America needs the rubber she will have to pay the higher prices caused by the scarcity, this is the law of trade all over the world. Cordial relations with the greatest consumer are desired by all interested in the British rubber producing industry, and nothing more than a fair deal is asked for. Even now Americans have the opportunity of making long term contracts at prices much more favorable than those in the open market, but there is not much desire to make such arrangements. On the contrary, the *Straits Times* hears that American consumers are gleefully looking to the middle of the year when they will try to bring prices down to half their present level. If they succeed in doing so, warns the paper, they will check the planting movement which should provide for the future and later on will have to pay heavily for a temporary advantage.

Production in 1926

Now that 100 per cent of standard production is in sight and at the same time prices have sagged, the question of Malaya's production during the year just begun is one that interests everybody. Standard production will not be far short of 300,000 tons, which is about 100,000 tons more than Malaya produced last year. Query: Will Malaya be able to produce the full 100 per cent allowed? That is, will there be available 100,000 tons more from this source alone than there was during the last restriction year? It has been stated on good authority that during November and December last the amounts exported were 2,000 tons below the permissible 85 per cent of standard production. If this is actually the case, it can hardly be expected that Malaya should be able to export her full quota, certainly not if estates continue to tap conservatively, that is every other day instead of every day.

It is held that as a large part of the rubber here is over its prime, daily tapping could not be kept up for long without adverse effects manifesting themselves, so that in the long run producers would serve their interests best by retaining the alternate daily system of tapping, not only in consideration for the health of the trees but over production might easily result at the present moment.

Up to the present, labor shortage has been a factor in consideration of alternate daily tapping since less labor is required with this method, but the situation has begun to improve and recent figures of arrivals of immigrants show a considerable excess as compared with departures. If this should continue until ample labor is available, the temptation to sacrifice future gains to present advantages to be reaped by producing to capacity may become too strong for most growers, if not all.

Netherlands East Indies

A rubber planter makes some interesting points in a discussion of forward contracts published in a local paper.

The manufacturer makes forward contracts because it is to his interest to be sure of a rubber supply at a known cost for a certain period of time; he wishes to be covered and to avoid higher prices in the future. This being the case the logical proceeding would be that he should be made to pay something above the prevailing price for this risk, instead of getting a considerable reduction as at present.

Furthermore, the rubber manufacturer is relieved of the necessity of storing his chief raw product himself for when he makes a

forward contract the producer becomes his storehouse, as it were.

On the other hand, producers lose a considerable portion of their profits by this practise.

One of the most important drawbacks in forward contracts, however, is that they diminish the significance of London stock figures and may lead to entirely erroneous calculations based on deductions from these figures. What is bought forward forms an unforeseen stock, a reserve of which the extent is unknown.

Producers should take advantage of the fear of higher prices that leads consumers to close forward contracts, this particularly as rubber is an article the production of which cannot be suddenly increased to meet unforeseen demands, as it takes six to seven years for rubber to mature, wherein of course lies the great difference between rubber and commodities like coal, copper, sugar, etc.

East Coast of Sumatra Trade

The importance of the East Coast of Sumatra as a rubber center continues to grow steadily. The total exports of rubber for 1925 were around 65,000 tons. Of this, 12,000 to 15,000 tons were so-called native rubber.

However, profits were considerably less than one would have thought, taking into account the high prices prevailing during the latter part of the year especially. The reason for this is that East Coast of Sumatra is just the territory where forward contracts on a very large scale have been concluded, and the higher prices figure only in a part of these. In this connection it is noted that the United States Rubber Plantations, Inc., is entering into so-called latex contracts on an ever growing scale, with the result that a large number of estates no longer need to prepare their product. Owing to this there is a marked decrease in the imports of rubber machinery and chemicals. The decrease in 1925 imports of acetic acid, for instance, is expected to be about 50 per cent as compared with imports during 1924.

Federated Malay States Rubber Co.

An agreement has been made between the Federated Malay States Rubber Co. and the shareholders of the Tolan Satoe Exploitatie Mij, whereby the first concern becomes the owner of all the shares of the latter. The Tolan Satoe company is a Netherlands East Indies firm with offices in Rotterdam, Holland. The capital is 500,000 guilders of which 200,000 guilders have been placed, on which 10 per cent has been paid up. The above transaction gives the Federated the ownership of 5,250 acres planted with rubber and 3,600 acres planted with palm-oil trees, all situated in fertile sections of Sumatra.

Anglo-Dutch Plantations Co.

Further details have come to hand regarding the plans of the Anglo-Dutch Plantations Co. to begin to exploit extensive territories in South Sumatra in 1926. It seems that half the capital of the new company formed to undertake the work in South Sumatra has been advanced by the Anglo-Dutch Plantations, while the other half has been obtained through a loan in the open money-market in London. The new company will be quite independent of the sister company in Java.

The lands have a total area of about 120,000 acres and are situated in Palembang and Benkoelen. Rubber cultivation will be undertaken in the neighborhood of Lahat and Benkoelen. It is intended to plant tea, coffee, and rubber and since large quantities of material are already on hand, work will soon be commenced.

The Rubber Situation

The news of plans to modify the restriction scheme so as to permit up to 130 per cent of standard production under specified circumstances, gives the well-known Dutch rubber man, J. N. Burger, occasion to make certain remarks anent standard production.

Talk of releases of 130 per cent, he says, suggests to the outsider the expectation of important increases in output, and this naturally could have a great influence on the market and might cause a fall in prices.

While an increase in available supplies is not undesirable, the question arises whether the British Malayan producers could fill their quota if up to 130 per cent exports were permitted.

The present maximum standard production for Malaya is 500 pounds per acre which converted into kilos per bouw works out at 793 half kilos per bouw. With this, Mr. Burger compares the average output per bouw during 1922-1924 for 22 Dutch concerns, of which only one exceeded the figure for 100 per cent of standard production. The average for the 22 companies works out at 559 half kilos per bouw, which is 71 per cent of the standard of 793 half kilos per bouw or 500 pounds per acre.

From this, Mr. Burger draws the conclusions that the standard production of 500 pounds per acre was too high, that when the export percentage under the restriction scheme was 75 per cent, the maximum of British productivity had been reached; that permission to export up to 130 per cent at certain prices is illusory; that no increases are to be expected from 130 per cent releases unless over-tapping is resorted to, and finally that the British reproach to the Dutch that restriction was carried out to benefit the Dutch is out of place.

Ceylon

The Controller of Rubber reports that Ceylon exported 4,641 tons of locally grown rubber and 378 tons of imported rubber during December, 1925, against 4,146 tons of Ceylon rubber and 424 tons of imported rubber in December, 1924. It should be noted that the exportable maximum for December, 1925, was 4,862 tons. During the last month of 1925, latex exports amounted to 1,000 gallons were reported.

The Problem of Restriction

A restriction problem that still remains unsolved is its apparent inelasticity, says the *Times of Ceylon* in a review of rubber during 1925.

This came to light in the July-October quarter of 1924 when with the price rising to 1*s* 8*d* and stocks rapidly decreasing, the scheme failed by a small margin to prevent a decrease in the export of British grown rubber and therefore a cut of 5 per cent took place.

The same defect was noticed in 1925 when despite quarterly increase of 10 per cent the price rose to 4*s* 8*d* in November while release had reached a level of 85 per cent.

The *Financial Times* forcasted a new restriction scale which provides, as at present, that if rubber is over 1*s* 3*d* per pound during any one quarter releases are to be increased by 5 per cent during the ensuing quarter and if not less than 1*s* 6*d*, the release to be increased by 10 per cent; but there is a further provision whereby the increase is to be 15 per cent if the price average is not less than 2*s* per pound. On the other hand, if the price is under 1*s* 3*d* per pound, the decrease in releases is to be 5 per cent, if under 1*s* 2*d*, 10 per cent and if under 1*s* 1*d*, 15 per cent. To prevent the percentage being increased to a fancy figure when the quarter's price does not exceed 2*s*, the percentage of release for the ensuing quarter will not be more than 100. When the quarter's price is not over 2*s* 6*d*, the percentage will not be above 110; three shillings, 120; four shillings, 130.

The recent high prices are not regarded as sound and a lower price, say 2*s* 6*d*, is considered much better for the industry as it would yield a fair profit to the producer without discouraging the consumer.

Labor in Ceylon

While Malaya is rather anxious regarding her labor supply, Ceylon is in the enviable situation of having an unprecedented influx from India during the last two years. Official figures show that while the number of Indian immigrants arriving in Ceylon to work on estates was 22,365 in 1921, it increased to 77,636 in 1922, to 89,859 in 1923, and to 153,989 in 1924. The arrivals in 1925 were 125,585.

Rubber Growing in the Netherlands East Indies

By G. F. van der Meulen[1]

NOWHERE in the world has a more scientific study been made of rubber growing than in tropical Holland. On the islands of Java and Sumatra there are six experimental stations with staffs of botanists, agriculturists and chemists who are constantly studying the problems which face the rubber industry at its source. All this information is of importance to companies which are planning to grow rubber, as considerable time and money spent in experimenting may be saved.

As happens very often, that which deserves most attention is most frequently overlooked. And so in the Netherlands East Indies the condition of the soil never caused the managers of rubber estates any sleepless nights. They thought that rubber would grow anywhere and continue to grow even on the poorest grounds. Some enterprises consisted originally of splendid soil but were subsequently neglected to such an extent that today their production is decreasing to an alarming extent. The soil has been robbed of its valuable inorganic salts which have been washed away during heavy rainfalls. The sun has further sterilized the soil by killing all micro-organisms which are needed as manufacturers of all kinds of plant foods. A healthy condition of the soil is one of the most important items on a well managed estate. In recent years all of the largest enterprises conduct not only a chemical analysis but a real scientific, agricultural investigation of the soil.

A Healthy Leguminous Cover Crop on an Old Hevea Plantation

The methods employed by the best managed estates in Java and Sumatra to accelerate and increase the rubber output, are based on the following cardinal points: (1) In order to have a high-yielding plantation there should be a virgin, fertile, deep soil. (2) It is most important that the soil be kept in the same condition as originally or, if possible, be improved. (3) In case the soil is not as good as could be desired, its fertility can be enhanced by the addition of artificial fertilizers.

In order to keep the soil in good condition the washing away of the top soil and its soluble substances should be prevented; it should be protected against direct rays of the sun; the physical condition of the soil improved and its surface kept in a moist condition even in the dry season.

Washing Away of the Top Soil

To prevent the upper soil from washing away in hilly territory, a combination of terraces, contour drains and cover plants are recommended. The contour drains, dug at certain distances depending on the sloping of the ground, prevent the water from flowing too rapidly over the surface and gradually divert it to a creek or ravine. Hedges of a low growing herbaceous plant along the upper side of these drains catch all the soil which might be washed away with the water and make for a natural terrace formation.

Preventing Soil Leaching

The great quantity of organic matter, as from leaf litter, contained in a soil layer, increases its water retaining property and decreases the quantity of rain water seeping through to the subsoil. The large absorption ability of the humus prevents undue leaching. In addition, the cover crops take a great supply of moisture from the soil by the leaves sweating. Millions of small fibrous roots of the cover crop frequently penetrate deep into the subsoil. All the soluble salts that are in this water are given back to the surface soil by the leaf fall. Under a thick cover crop there usually will be an upward movement of the water in the soil, not a downward one.

Protecting the Soil Against Sunshine

When the surface of the soil is exposed to intense sunlight it dries out and frequently becomes as hard as if baked in an oven. The direct rays of the sun have a very deleterious effect, especially on the texture of heavy soils. Similarly, sunshine is very bad for the bacterial life in the surface soil, which it sterilizes. If there is a thick cover of plants the temperature and the moisture content of the upper soil are more favorable for the life and development of the soil bacteria which are necessary to stimulate the plant food in the soil.

Keeping Soil in Good Condition

Upon opening the soil for cultivation it will usually be found to contain a sufficient amount of humus (organic matter). If the ground is not covered by some crop before long, all organic matter will have decayed and the heavy tropical rains and intensive sunshine will help to impoverish the physical condition of the soil. All processes in the soil, favorable to the rubber tree, depend on moisture and air. Many of these processes are effected by bacteria which need humus, moisture and water for their development.

These favorable conditions can be created by planting a cover

[1]Graduate agriculturist. Formerly adviser of the Rubber Experimental Station "West Java," Buitenzorg, Java.

crop. The enormous leaf fall and the decaying of the great number of fibrous roots supply a great quantity of organic matter which will be mixed with the soil by the earth worms. Heavy clay soils especially, with a bad physical texture, will be very much improved by the addition of organic matter. The roots also of the rubber tree need enough air in the soil for their proper development.

Keeping Surface Moist in Dry Season

Most soils dry in the dry season which causes large cracks in the surface to a depth sometimes of one foot. This means not only that the fine hair roots are damaged thereby and frequently die out but the plant itself, through lack of moisture, is not able to acquire enough plant food. This condition recurs every year to the great detriment of the tree. And they are not alone the clean-weeded soils that are rent in this manner but even those which have so-called beneficient grasses and leguminous plants whose roots do not penetrate deeply.

The writer has repeatedly and for many years pointed out to plantation owners that the top soil, in which the lateral roots of the rubber tree are to be found, remains moist during the entire dry seasons when covered by a deep rooted leguminous cover crop which does not die off in the dry season.

The Cover Crop

All this can be accomplished by planting between the trees vegetation with deep penetrating roots that will remain there permanently in contrast with the so-called annual cover crops. This kind of cover crop is mostly obtained from seeds. It serves as a protection for the soil and the roots of the rubber trees against the effect of heavy rainfalls and sunshine. These cover crops are not intended to be a catch-crop for the purpose of harvesting in addition to the main crop. Low creeping leguminous plants are preferred as cover crops, for these plants are able to draw by their bacteria, which are living in nodules of the roots, the nitrogen from the air.

Many different species of leguminous plants are now used on the rubber estates but most of them die in the dry season or are attacked by disease. They are those which, while developing satisfactorily in young open plantations, cannot thrive in the shade, and begin to die out when rubber trees grow into a closed compact. There are others which can stand the shade once they are well established, but a few only can really be said to thrive in the shade. In new open plantations they form a layer of from 1 to 1½ feet thick, killing all obnoxious growths if in the beginning a little weeding has been done.

It is not necessary to plow this cover crop under as with the cultivation of annual crops. The wide reaching, superficial, lateral root system of the rubber tree would hereby be endangered. The leaf litter of the cover crop will be mixed with the top soil by the earth worms and without damaging the delicate roots of the rubber tree.

Fertilization of Rubber Trees

The many investigations on the fertilization of rubber trees on different soils have shown the enormous influence of fertilization on the development of young rubber trees on soil of medium quality. With a rational system of fertilization and the planting of deep rooted leguminous cover crops, which make a continuous growth of the rubber tree possible through the entire year, well developed, tappable trees can be obtained three years after planting. This means that two whole years are saved by these methods, which is of the greatest importance during the next few years when a scarcity of rubber is inevitable. On Sumatra's east coast some estates have been very successful by fertilizing tappable trees on certain soils. The yield of the fertilized trees increased more than 100 per cent.

NOT FERTILIZED FERTILIZED

The Effect of Fertilizing Hevea Rubber Trees

Selected Plant Material

The production per areal unit may be greatly increased by planting selected plant material, seeds or buddings. Splendid results have been obtained of late years and records are available of productions from 600 to 800 pounds per acre, as against an average production of 350 pounds for all plantations. It is not improbable that still higher production figures, of from 800 to 1,000 pounds, may be obtained by a special selecting of all plant material.

All new estates should acquire this selected seed to the exclusion of all other, and then apply the methods described above, in order to increase the production value of the rubber tree and to maintain it constantly. It is only then that rubber may be produced at a minimum cost and that competition with native growers is possible.

DURING NOVEMBER, 1925, THE CHIEF MARKETS FOR AMERICAN-made tires were as follows: United Kingdom, 11,116 casings, value $150,259; Mexico, 12,419, value $146,279; Argentina, 7,810, value $114,429; Cuba, 8,418, value $97,755; Australia, 5,617, value $94,099; France, 5,653, value $79,572; and Spain, 3,566, value $71,281.

Rubber Patents, Trade Marks and Designs

The United States

January 12, 1926*

1,569,206 Arch supporter. Lawrence E. Scrannage, Philadelphia, Pennsylvania.

1,569,273 Leck dust cap for tire valves. John M. Galbraith, Minneapolis (assignor of one fourth to Mrs. Karen Jensen, St. Paul), and Louis N. Jensen, St. Paul, all in Minnesota.

1,569,337 Rubber sponge ink pad for rubber stamps. Edward F. Rolle, Forest Hills, assignor to Rolle Rubber Co., New York, both in New York.

1,569,393 Rubber roll. John J. Rathers, assignor to Lovell Manufacturing Co., both in Erie, Pennsylvania.

1,569,475 Bathing cap. James H. Gilson, Chicago, Illinois.

1,569,536 Roll for washing machines. H. Stanley Crysler, Lowell, assignor of fifty one-hundredths to Robert J. Wilkie, Newton, both in Massachusetts.

1,569,693 Nursing nipple. Llewellyn C. Young, Toledo, Ohio.

1,569,741 Paving block. Alfred A. Glidden, assignor to Hood Rubber Co., both of Watertown, Massachusetts.

1,569,783 Fountain pen. Eric C. Fearson, assignor to Eagle Pencil Co., both of New York, N. Y.

1,569,826 Rubber covered spinning roller. Allan B. Merrill, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

January 19, 1926*

1,569,850 Pneumatic automobile spring. Edward Everett Cothran, Wright, California.

1,569,877 Apparatus for maintaining constant temperature on a portion of the body. Samuel Logan Owens, Washington, D. C.

1,569,888 Steering wheel. Harry E. Sheller, Portland, Indiana.

1,569,960 Raincoat. Walter Beisler, New York, N. Y.

1,569,964 Truss. George W. Cardey, assignor of one half to Joseph A. McCoy, both of Lancaster, Wisconsin.

1,569,968 Garter or armlet. Leon M. Davis, Fairmont, West Virginia.

1,570,026 Fountain pen. Frank E. Adamson, Greenville, Illinois.

1,570,048 Solid tire. Earle Henry Dickensheet, Kansas City, Missouri, assignor to Faultless Pneumatic Tire Co., Seattle, Washington.

1,570,357 Dental toothpick. William F. Lawrenz, Long Beach, California.

1,570,397 Tire valve. Clarence S. Preston, San Diego, California.

1,570,470 Air boat. Walter P. Fritsche and John Diehl Clarke, both of New Haven, Connecticut.

1,570,492 Garment supporter. Marvin J. Jackson, Youngstown, Ohio.

1,570,534 Rubber cover for bobbins. Edward Sweeney, Norristown, and George A. Hunsburger, Pittstown, both in Pennsylvania.

1,570,567 Toy balloon. Leeva R. Holycross, Columbus, Ohio.

1,570,590 Tire and demountable rim. Charles M. Manly, Richmond Hill, assignor to O & W Co., New York, both in New York.

January 26, 1926*

1,570,636 Life preserver suit. Andrew Meilland, Buffalo, New York.

1,570,642 Toy balloon valve. John D. Reed, Toledo, Ohio.

1,570,663 Pneumatic tire casing. Amos A. Wyckoff, Oakland, California.

1,570,698 Toy. Elbert E. Moorhead, San Francisco, California.

1,570,761 Brush with rubber sleeve. Anthony J. McCormack, New Haven, Connecticut.

1,570,824 Surface washer. Lester George Clark, Montreal, Quebec, Canada, assignor by mesne assignments to The E. Z. Auto Washer Co., New Haven, Connecticut.

1,570,937 Garter and armlet. Anna Pichowetz Brand, assignor to Benjamin A. Brand, both of Chicago, Illinois.

1,571,072 Automatic tire inflating mechanism. John T. Talbert, Bradley, South Carolina.

1,571,095 Multiple fastener. Joseph E. Perrault, assignor to Hood Rubber Co., both of Watertown, Massachusetts.

1,571,151 Garter. Arthur J. Wehr, Oceanport, assignor of one half to Milton J. Goldstein, Long Branch, both in New Jersey.

February 2, 1926*

1,571,363 Fountain pen. James Barker, Kalamazoo, Michigan.

1,571,466 Heel protector. Emil Barthes, Salinas, California.

1,571,477 Fountain pen. Charles M. Haynes, Chillicothe, Ohio.

1,571,804 Solid tire. Jeronimo Samson, Pasay, Rizal, Philippine Islands.

1,571,823 Musical instrument with elastic strap. Frank R. Weaver, Fairgrove, Missouri.

1,571,865 Combined dust cap and air seal for tire valve stems. George W. Oakes, Crystal City, Missouri.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

The Dominion of Canada

January 5, 1926

256,973 Compression tube. Roper C. Spartling, Opelika, Alabama, U. S. A.

257,030 Tire. The Lambert Tire & Rubber Co., Barberton, assignee of Wallace R. Gillam, Tallmadge, and Robert J. Bonstein, Akron, all in Ohio, U. S. A.

257,031 Cushion tire. The Lambert Tire & Rubber Co., Barberton, assignee of Carl E. Rett, Akron, both in Ohio, U. S. A.

257,032 Cranial hole tire. The Lambert Tire & Rubber Co., Barberton, assignee of Wallace R. Gillam, Tallmadge, both in Ohio, U. S. A.

257,033 Cushion tire. The Lambert Tire & Rubber Co., Barberton, Ohio, assignee of Henry M. Lambert, Portland, Oregon, both in U. S. A.

January 12, 1926

257,123 Decorating automobile tires. Jackson D. Comstock, Chester, West Virginia, U. S. A.

257,124 Footwear. Oliver P. Hussey, Cambridge, Massachusetts, U. S. A.

257,148 Cushion tire. Horace Hillyard Hastings, Quebec, Quebec.

257,278 Water bottle. The Seamless Rubber Co., Inc., assignee of John W. Patterson, both of New Haven, Connecticut, U. S. A.

January 19, 1926

257,303 Pneumatic tube. George F. Armstrong, Rutherford, New Jersey, U. S. A.

257,323 Tire flap. Dennis R. Dixon, Baltimore, Maryland, U. S. A.

257,410 Fastener. The Canadian Consolidated Rubber Co., Ltd., Montreal, Quebec, assignee of Daniel Francis Dalton, Waterbury, Connecticut, U. S. A.

257,411 Multiple fastening device. The Canadian Consolidated Rubber Co., Ltd., Montreal, Quebec, assignee of Henry Zenas Cobb, Providence, Rhode Island, U. S. A.

257,412 Building member. The Canadian Consolidated Rubber Co., Ltd., Montreal, assignee of Albert D. Thornton, Westmount, both in Quebec.

257,473 Life preserver. Nicholas Ogrodnick and Michael Sokoloski, assignee of one half the interest, both of Girardville, Pennsylvania, U. S. A.

January 26, 1926

257,495 Pneumatic horse collar. James Andrew Neely, Waimate, and Robert Percival Henry, Glenavy, near Waimate, both in South Baterbury, New Zealand.

257,563 Heel. William Joseph Kent, New York, N. Y., U. S. A.

257,639 Reservoir pen. Thomas De La Rue & Co., Ltd., assignee of Henry John Dixon, both of London, England.

February 2, 1926

257,762 Template for trimming neck. Nicholad C. Powers, Chicago, Illinois, U. S. A.

The United Kingdom

December 31, 1925

242,366 Shoe press with elastic cushion. A. Duffield, 636, High Road, Tottenham, London.

242,400 Golf practising appliances. C. F. Copleston, 28, Monkwell street, London.

242,412 Windshield. A. Riley, Midland Motor Body Co., Aldbourne Works, Aldbourne Road, Coventry.

242,459 Hard rubber tire. W. & A. Bates, Ltd., and J. Healey, St. Mary's Mill, Leicester.

242,481 Grips for boots. T. Collins, 35, Castle street, Bridgend, Glamorgan.

242,483 Corsets. S. Percival, 40, Chancery Lane, London (Poirette Corsets, Inc., 11 East 26th street, New York, N. Y., U. S. A.).

242,503 Rubber blocks for gear box. G. T. Smith-Clarke, Shenandoah, Gibbet Hill, Kenilworth, Warwickshire, and T. G. John, Bromwood, Kenilworth Road, Coventry.

242,539 Solid tires. Gummiwerke Fulda, Akt.-Ges., Fulda, assignee of L. Härter, 17 Sedanstrasse, Dresden, both in Germany.

242,564 Puncture or deflation indicator. J. E. Kennedy, 742 South Hill street, Los Angeles, California, U. S. A.

January 6, 1926

242,615* Rubber cushion for artificial teeth. R. M. Withycombe, Wyoming, Masquarie street, Sydney, Australia.

*Not yet accepted.

Chemical patents will be found on page 327. Machinery and Process patents on pages 332-333

242,692 Rubber pad for horseshoes. J. A. Ross, 2, Waterside Road, Stapenhill, Burton-on-Trent.

242,746 Sock suspenders. H. Frank, 25, Chiswell street, Finsbury Square, London.

242,772 Tire repair band. A. C. Barrett, and C. H. Saunders, Evington Valley Mills, Leicester.

242,806 Football game. H. R. May, 1, Gloucester Gardens, Richmond Hill, Surrey, and A. C. Horth, 18, Leyland Road, Lee, London.

242,840 Ampoules. E. Baumgart, Falkenberg, near Grünau, Germany.

242,851 Thread reels. E. G. Banks, Waihi, Auckland, New Zealand.

242,854 Stocking suspender. E. D. Button, 26, Stockwell Road, London.

242,866 Terrestial globe. H. F. Anns, 159, Victoria street, Westminster.

242,879 Fountain pen filler. J. Gillies, Fort Scott, Kansas, U. S. A.

242,881 Rubber lined shield for caps. J. M. Laurie, 3, Battery Place, Rothesay, Buteshire.

242,899 Foot arch support. W. M. Scholl, 211 West Schiller street, Chicago, Illinois, U. S. A.

January 13, 1926

242,952* Hat cover. L. Berton, Tribano, Padua, Italy.

243,072 Foot guards. P. M. Tennick, 56, Woodstock Road, Bedford Park, London.

243,079 Shock absorbers. M. Lobelle, Cranford Lane, Hayes, Middlesex.

243,086 Pressure gages. Dunlop Rubber Co., Ltd., 1 Albany street, Regent's Park, London, C. Macbeth, G. A. Mortier, and A. Kay, of Dunlop Rubber Co., Fort Dunlop, Erdington, Birmingham.

243,110 Pen cap. L. R. Wade, 4, Duke street, Adelphi, London.

243,116 Rubber pad for horseshoes. A. Foster, Ilmington, Crescent Road, R. C. Plumb, 15, Pinfold street, and C. J. Wright, 215, Walsall Road, all in Darlaston, Staffordshire.

243,174 Heel lift. Wood-Milne, Ltd., and J. G. Brockbank, 2, Central Buildings, Westminster.

January 20, 1926

243,385 Buffers. V. Kastner, 20 Bachstrasse, Aachen, Germany.

243,395 Phonograph diaphragm. A. F. Sykes, Arundel House, Warwick Road, New Barnet, Hertfordshire.

243,487 Rubber sheet for sliding doors. C. Dudon, 90, Cobbold Road, Willesden, London.

243,493 Electric wire terminals employing rubber tube. M. L. Williams, 38, Bloomfield Road, Moseley, Birmingham.

243,536 Mud guards for wheels. C. McDowall, 52, Bute street, Moston, Manchester.

243,561 Rubber printing surfaces. H. Bielefeldt, 5 Seydelstrasse, Berlin, Germany.

243,581 Mud guards. C. W. Pass, 49 Napier street, Ardwick, and E. Ferry, 14, Swayfield avenue, Dickenson Road, Longsight, both in Manchester.

243,602 Venting apparatus. N. C. S. Pursey, 29, Harewood avenue, Marylebone, London.

243,620 Sock suspender. R. Stephenson, 14, Eldon Road, Blackburn.

243,679* Flexible joints. L. Thiry, 44 Rue St. Pierre, Huy, Belgium.

*Not yet accepted.

New Zealand

December 17, 1926

55,115 Catamenial bandage. Elizabeth Cilinia Whitlock, 609 South Dearborn street, Chicago, Illinois, U. S. A.

55,168 Cushion tire. Edward Brice Killen, 27 Queen Victoria street, London, E. C. 4, England.

55,229 Tire flap. Beaney Rubber Co., Inc., 117 West 46th street, New York, assignee of Thomas Arthur Beaney, 70 Parker avenue, Poughkeepsie, both in New York, U. S. A.

55,279 Rubber sheets used as advertising means. James George Davies, Daking House, Sydney, New South Wales.

55,291 Pneumatic tire. John Robert O'Brien, 38 Morgan street, Marrickville, near Sydney, New South Wales.

Germany

423,859 (July 8, 1924). Closing cap of hard rubber or similar material. Firma Dr. Heinrich Traun & Söhne, vormals Harburger Gummi-Kamm Co., Hamburg.

424,005 (May 8, 1925). Gymnastic apparatus with rubber cables. Dr. W. Kampschulte A.-G., Solingen.

424,006 (May 3, 1925). Hollow, gas-filled ball, especially tennis ball, composed of several layers superimposed. Harburger Gummiwaren-Fabrik Phoenix A.-G., Harburg a. d. E.

424,060 (August 19, 1924). Air tube. Max Draemann, von Sandtplatz 1, Köln-Deutz.

424,270 (December 3, 1924). Air cushion, for orthopedic purposes. Alfred Klotz, Lindwurmstrasse 76, Munich.

Labels

The United States

29,797 HUG-ME-TITE TIRE PATCH—tire patches. Clarence J. Livengood, Winston-Salem, North Carolina. Published November 6, 1925.

Trade Marks

The United States

Two Kinds of Trade Marks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the later act trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

January 12, 1926, Act of February 20, 1905

207,757 The words: "THE QUALITY APRON" and "IMPREGNABLE"—aprons. Ernest H. Philpott, doing business as Windermere Products Manufacturing Co., East Cleveland, Ohio.

207,778 NUAIR—tires. Frederick C. Roegge, Los Angeles, California.

207,789 RUN-O-BOARDS automobile running board treads. Rubber-On-Metal Welding Corporation, New York, N. Y.

207,820 OMO, with wings sprouting from the top of the letter M—infants' rubber pants and sanitary bloomers. The Omo Manufacturing Co., Middletown, Connecticut.

207,851 Diamond enclosing the word: "BESTYLE"—slippers of leather, rubber, etc. S. Goldberg & Co., Inc., West New York, New Jersey.

207,853 BOULEVARD, the letters becoming larger toward the center—mittens and gloves of leather, rubber, etc. C. D. Osborn Co., Chicago, Illinois.

207,854 PARKWAY, the letters becoming larger toward the center—mittens and gloves of leather, rubber, etc. C. D. Osborn Co., Chicago, Illinois.

207,857 ARCHOLD—shoes of leather and rubber. O'Donnell Shoe Co., St. Paul, Minnesota.

207,858 WARMBILT—mittens and gloves of leather, rubber, etc. C. D. Osborn Co., Chicago, Illinois.

207,875 FLUXRITE—oil compound to free rubber from molds. Damascus Manufacturing Corporation, Cleveland, Ohio.

207,882 PEEP O'DAY—shoes of leather, rubber, etc. I. Enie Fink, doing business as Peep O'Day Shoe Co., Rochester, New York.

207,903 The words: "BEN LEWIS" and "EXCLUSIVE FOOTWEAR"—shoes of leather, rubber, etc. Ben Lewis, New York, N. Y.

207,904 ENTERPRISE, the letters shaped to form a diamond—belts and garters. Enterprise Belt Manufacturing Co., Inc., New York, N. Y.

207,928 BUMPER—heels. Essex Rubber Co., Inc., Trenton, New Jersey.

207,949 BALL-BAND—garters. Mishawaka Rubber & Woolen Manufacturing Co., Mishawaka, Indiana.

207,974 RUBBERIBBED—soles. Firestone-Apsley Rubber Co., Hudson, Massachusetts.

207,975 ARTERY GUARDERS—hose supporters. Ivory Garter Co., New Orleans, Louisiana.

207,976 A circle enclosing the words: "HAND DRAWN PROCESS," around this an outer circle in which are the words: "SLOAN'S TACKLESS"—shoes of leather, rubber, etc. Craddock Terry Co., Lynchburg, Virginia.

207,989 Rectangular figure of which one-half is red and the other white, the red half containing the word: "HI-PRESS," and the white, "GOODRICH"—boots and shoes. The B. F. Goodrich Co., New York, N. Y.

January 12, 1926, Act of March 19, 1920

207,997 FENTON—shoes of leather, rubber, etc. Saks & Co., New York, N. Y.

January 19, 1926, Act of February 20, 1905

208,112 Representation of a train, one car of which bears the word: OSBORN—gloves of leather, rubber, etc. C. D. Osborn Co., Chicago, Illinois.

208,116 VELVETEX—black pigments for use in rubber industry. Binney & Smith Co., New York, N. Y.

208,131 OMO, two wings sprouting from the letter M—dress shield, collar bands, narrow elastic web and bias tape. The Omo Manufacturing Co., Middletown, Connecticut.

208,172 A diamond containing the words: "EZY-ON" and "TRADE MARK"—automobile and truck tire casings, and inner tubes, lace boots, interlining for tires and fan belts. Virgil V. Moore, Murfreesboro, Tennessee.

208,233 MONOPUL—shoes of leather, rubber, etc. Mishawaka Rubber & Woolen Manufacturing Co., Mishawaka, Indiana.

208,238 VALCLAR RUB-ER-RUB—rubber massage bath brushes. Kase-Quinby Rubber Co., Inc., New York, N. Y.

January 26, 1926, Act of February 20, 1905

208,258 KIRKBRO—garters. Kirkpatrick & Brown, Newark, New Jersey.

208,273 Representation of a woman's head encircled by the words: REAL STYLE SHOES—shoes and slippers of leather, rubber, etc. Real Style Shoe Co., Cincinnati, Ohio.

208,287 Two pennants crossed each bearing the word: FEDERAL—tires. The Fisk Rubber Co., Chicopee Falls, Massachusetts, and Cudahy, Wisconsin.

208,294 BALLOON—boots and shoes. Firestone-Apsley Rubber Co., Hudson, Massachusetts.

208,303 MOGUL—shoes of leather, rubber, etc. Chicago Mail Order Co., Chicago, Illinois.

208,340 Representation of a donkey with a background of mountains, superimposed across the picture are the words: "Burrow" and "Rocky Mountain"—boots for tires. Burrow Manufacturing Co., Spokane, Washington.

January 26, 1926, Act of March 19, 1920

208,355 HANSEN BLACK BEAUTY—gloves of leather, fabric and rubber. O. C. Hansen Manufacturing Co., Milwaukee, Wisconsin.

208,357 NARRO-REST HEEL—shoes of leather and rubber. Kurz & Lapidus, Inc., Brooklyn, New York.

208,371 GOLD MEDAL—golf balls. The Faultless Rubber Co., Ashland, Ohio.

208,381 In script the words: "CHAS. A. SCHIEREN COMPANY," and beneath the year: 1868—belting for power transmission purposes. Charles A. Schieren Co., New York, N. Y.

208,390 WALD—automobile, bicycle and motorcycle accessories. Wald Manufacturing Co., Maysville, Kentucky.

208,392 PLYRUBBER—tread member for boots and shoes. Plyrubber Heel Co., Boston, Massachusetts.

208,394 "LEHIGH SAFETY" enclosed in double circle—leather and rubber boots and shoes. Lehigh Shoe & Rubber Co., Allentown, Pennsylvania.

February 2, 1926, Act of February 20, 1905

208,398 Triangle containing the year: 1860, and the letters: T.P.A.P.M. and C. Aetephypib—rubber sundries for surgical, dental or invalid use. Société Française Tréugolnik, Levallois-Perret, France.

208,400 Representation of two hands putting a flap on a rim—flaps. North Eastern Rubber Co., Elizabeth, New Jersey.

208,406 RELIANCE—inner tubes. The Goodyear Tire & Rubber Co., Akron, Ohio.

208,448 TENSILAC—accelerators. The Roessler & Hasslacher Chemical Co., New York, N. Y.

208,497 A red circle in the center of which are the letters: S R—atomizers and certain rubber sundries. The Seamless Rubber Co., Inc., New Haven, Connecticut.

208,542 Black circle containing the words: "FRIED-LANG LEATHER CO., INC., NEW YORK CITY," and in the center the letters: F-L—adhesive rubber cement. Fried-Lang Leather Co., Inc., New York, N. Y.

208,548 RED CHIEF—inner tubes. William Ralph Calhoun, doing business as Red Chief Rubber Co., Fort Worth, Texas.

February 2, 1926, Act of March 19, 1920

208,628 ALLBESTOS-FORD-BLUE—brake linings. Allbestos Corporation, Philadelphia, Pennsylvania.

208,634 PHILLIPS—rubber pad attachments to soles or heels. Phillips' Patents, Ltd., London, England.

208,648 LONGFELLOW—golf balls. Reilly Rubber Co., Los Angeles, California.

The Dominion of Canada

Registered

January 5, 1926

39,044 Word: "SNUGTEX"—anti-slip textile material. Everlastik, Inc., Chelsea, Massachusetts, U. S. A.

January 19, 1926

39,088 Word: "PALCO"—auto accessories. P. A. Lefebvre & Co., Alexandria, Ontario.

February 2, 1926

39,146 Ellipse with the words: "CONSTANT AW STYLE" inserted therein, and underneath the words: STEEL ARCH SUPPORT—shoes of leather, rubber, etc. The Ault-Williamson Shoe Co., Auburn, Maine, U. S. A.

The United Kingdom

January 6, 1926

462,657 PLYCOREX—heel and heel lifts, pads and tips—Wood-Milne, Ltd., 2 Central Buildings, Westminster, London, S. W. 1.

463,016 Shield in which is inserted at the top a circle containing the monogram: PBC, and beneath the words: "BURSTPROOF," "SEWN SEAMS" and "MADE IN ENGLAND"—hot water bottles. P. B. Cow & Co., Ltd., 46, Cheapside, London, E. C. 2.

463,085 Circle in which is inserted a representation of an Indian's head and the word: REDWING—fountain pens. Wyvern Fountain Pen Co., 143-144, Holborn, London, E. C. 1.

463,114 SANAFONT—douches and syringes. Harry Brown, trading as The Common Sense Health Co., 104, Mansfield Road, Nottingham.

463,418 An oblong in the center of which is a representation of a rose around which are the words: "TOROSCOAT," "MADE IN ENGLAND" and "GUARANTEED TO STAND ALL CLIMATES"—raincoats. H. Rosenthal & Son, Tower Works, Alban street, Broughton Lane, Manchester.

464,663 CAMRO—elastic webs, cords and braids. Ollard, Westcombe & Co., Ltd., 46, Great Charles street, Birmingham.

January 13, 1926

463,883 Representation of a compass—waterproof articles of clothing. George MacLellan & Co., Ltd., Glasgow Rubber Works, Shuna street, Maryhill, Glasgow.

464,160 VICEDGE—edges for doors. The Federated Engineers, Ltd., 18, Victoria street, Westminster, London, S. W. 1.

January 20, 1926

464,580 BIRDIE COLONEL—golf balls. St. Mungo Manufacturing Co., Ltd., 185, Broomloan Road, Glasgow.

B464,682 REDIPOINT—fountain pens. Ingersoll Redipoint Co., Inc., University and Syndicate streets, St. Paul, Minnesota, U. S. A. (William Brookes & Son, London and Lancashire House, 5, Chancery Lane, London, W. C. 2).

New Zealand

December 17, 1925

25,243 RESILION—rubber sponges. Horace Victor Marr, 223 Walcott street, Mount Lawley, Australia.

Designs

The United States

69,198 Storage battery jar. Term 3½ years. American Hard Rubber Co., Hempstead, New York.

69,217 Tire. Term 14 years. Albert Hargraves, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

69,227 Hot water bottle. Term 14 years. Ora Krichbaum, Delaware, Ohio.

69,229 Tire tread. Term 14 years. Henry S. Mooradian, assignor to The Dayton Rubber Manufacturing Co., both of Dayton, Ohio.

69,258 Tire. Term 3½ years. Laurence R. Davis, New York, N. Y., assignor to G. & J. Tire Co., Indianapolis, Indiana.

69,322 Tire tread. Jules Hauvette-Michelin, New Brunswick, assignor to Michelin Tire Co., Milltown, both in New Jersey.

69,339 Tire. Term 7 years. Lysander E. Wright, East Orange, and Henry B. Constantin, Clifton, both in New Jersey.

69,340 Tire. Term 7 years. Lysander E. Wright, East Orange, and Henry B. Constantin, Clifton, both in New Jersey.

The Dominion of Canada

6,987 Hot water bottle. Ora Kirchbaum, Delaware, Ohio, U. S. A.

7,002 Overshoes. Kaufman Rubber Co. (Ontario), Ltd., Kitchener, Ontario.

Germany

925,109 (September 5, 1925). Automobile tire of cellular rubber. William Sachs, Lessingstrasse 33, Berlin.

925,168 (August 18, 1925). Feeding bottle. Georg Günthel, Unterstützengrün i. V.

925,246 (September 3, 1925). Multicolored star of dental rubber for use as color scale. W. J. Merbeck & Rohm, Cologne.

925,285 (May 19, 1925). Toy consisting of a rubber film filled with hydrogen or the like. "Isak," Internationale Fabrikations Gesellschaft für Kautschukwaren m. b. H., Berlin.

925,555 (August 29, 1925). Rubber hot water bottle. G. Kubler & Co., m. b. H., Berlin-Reinickendorf.

925,677 (August 3, 1925). Sponge or solid rubber ball. Leo Grossmann, Dorfstrasse 36, Berlin-Mariendorf.

926,523 (September 29, 1925). Pneumatic, elastic pelote. W. Gay & Co., Frankfurt-am-Main.

926,613 (August 29, 1925). Balloon of marbleized rubber sheet. Sachsland Gummiwarenfabrik, Bürgel, Thuringia.

926,692 (September 16, 1925). Traveling case of rubberized fabric. A. Sachs Söhne, Berlin.

926,958 (August 25, 1925). Horseshoe with exchangeable solid rubber head. Conrad Quednau, Zoppot, Freist, Danzig. Represented by F. Scheffler, Glienicke, Nordbahn.

927,095 (September 9, 1925). Rubber coin plate. Alfred Scheunemann, Bellermannstrasse 12, Berlin.

927,415 (October 6, 1925). Pneumatic tire. Hannoversche Gummiwerke Excelsior, A.-G., Hannover-Limmer.

928,195 (October 6, 1925). Rubber bath-tub cushion. Vereinigte Berlin-Frankfurter Gummiwarenfabriken, Berlin-Lichterfelde.

928,201 (October 26, 1925). Cushion saddle with sponge rubber insert for bicycles and motorcycles. Lohmann-Werke, A.-G., Bielefeld.

928,263 (September 10, 1925). Bathing slipper. Gummiwarenfabrik, M. Steinberg, Köln-Lindenthal.

928,304 (October 12, 1925). Stamp moistener with sponge rubber insert. Belinde-Werke, A.-G., Wandsbek.

928,521 (October 17, 1925). Rubber glove. Julius Friedländer, Gummiwarenfabrik, G. m. b. H., Berlin.

928,594 (October 8, 1925). Toe protector of sponge rubber. Annaluise Poppe, née Schlieper, Pegauerstrasse, Leipzig-Co.

928,738 (October 20, 1925). Collapsible pitcher of rubberized fabric. Walter Franz, Falkenried 80, Hamburg.

929,378 (October 12, 1925). Conveying band covered with crêpe rubber to increase durability against natural wear and tear. Wilhelm Römer, Sandtorstrasse 6, Magdeburg.

929,636 (March 5, 1925). Automobile cellular tube. Günter Nowak, Peterswaldau, Bez, Breslau.

929,692 (October 21, 1925). Bath glove of sponge rubber. A.-G., Metzeler & Co., Munich.

929,826 (October 12, 1925). Garden umbrella with cover of colored rubberized, double fabrics. L. Stromeyer & Co., Konstanz.

929,995 (October 29, 1925). Atomizer in the form of a doll. Firma Brüder Rachmann, Haida, Czechoslovakian Republic. Represented by Dr. Alexander-Katz, Berlin, S. W. 48.

930,052 (October 28, 1925). Winter rubber coat. Max Brasch, Spandauer Brücke 4-5, Berlin.

930,083 (August 28, 1925). Glass mold for seamless rubber gloves. Fritz Voigt, Bad Blankenburg, Thuringian Forest.

930,612 (October 31, 1925). Sponge rubber mat and the like. A.-G., Metzeler & Co., Munich.

930,682 (October 15, 1925). Handle for toilet chain. Rheinische Gummi-Gesellschaft W. Klotz & Co., Dusseldorf.

930,714 (October 31, 1925). Braided elastic band. Firma Ewald Schmidt, Barmen-R.

930,766 (October 21, 1925). Sanitary nipple. Dr. Fritz Sauer, Ludwigstrasse 3, Freiburg i. B.

930,783 (November 5, 1925). Band shaped ring of sponge rubber. Emil Schwabe, Limmerstrasse 27, Hannover-Linden.

930,857 (November 6, 1925). Seamless air cushion of dipped rubber sheet. William Sachs, Lessingstrasse 33, Berlin.

931,100 (September 3, 1925). Tube for vehicle tires. Edmund Adam, Zittau.

931,202 (November 6, 1925). Ball with rubber cover and filling of other material. Franz Krüger, Beethovenstrasse 31, Saarbrücken.

931,219 (November 19, 1925). Rubber tube that withstands the action of benzine and the like. Internationale Asbest-Gummi-und Kaltleim-Industry G. m. b. H., Hamburg.

931,455 (October 21, 1925). Rubber panties with side fastening. Ph. Herz, "Herzila"-Garantie-Gummifabrikate, Windsheim.

932,743 (November 10, 1925). Device for automatically guarding pressure in pneumatic tires, particularly balloon tires. Erich Rohde, Jakobstrasse 10, and Karl Reubold Jun., Marktplatz 2, Hannover-Linden.

932,748 (November 12, 1925). Shoe-gumming press with convex, fixed stand, having a top of soft rubber. Albrecht Hartmann, Ostbahnstrasse 18, Dresden.

933,080 (November 17, 1925). Device for indicating damage in pneumatic tires. Wilhelm Johannes, Goltzstrasse 14, Berlin.

933,404 (November 30, 1925). Rubber non-skid tire. Continental Caoutchouc-und Gutta-Percha Compagnie, Hannover.

933,464 (November 28, 1925). Rubber tube with grooved exterior. Firma Joh. Howe G. T. Adrian Nachfolger, Hamburg.

Prints

The United States

8,455 PANDORA DAY. Slickers, etc. Yalisove & Sigmund, Wilmington, Delaware. Published October 13, 1925.

8,495 SOLID COMFORT—THAT'S WHAT YOU'LL SAY WHEN YOU PUT YOUR OLD SHOES ON AFTER WE'VE REPAIRED THEM—WE USE GOOD—WINGFOOT—YEAR WINGFOOT SOLES AND HEELS. Soles and heels. The Goodyear Tire & Rubber Co., Inc., Akron, Ohio.

8,514—GOOD WORK—GOOD MATERIAL AND A FAIR SQUARE PRICE—BRING IN YOUR OLD SHOES FOR REPAIR—WE USE GOOD—WINGFOOT—YEAR WINGFOOT SOLES AND HEELS. Soles and heels. The Goodyear Tire & Rubber Co., Inc., Akron, Ohio.

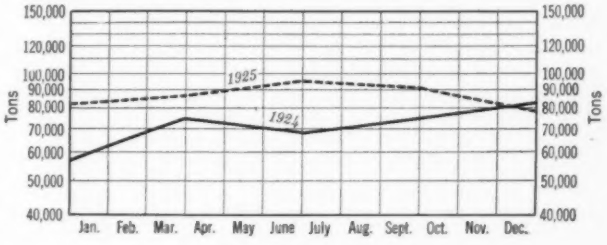
8,538 FIT-FAST RUBBER SOLES. Soles. Durable Rubber Corporation, Detroit, Mich.

Consumption of Crude and Reclaimed Rubbers Compared

STATISTICS on the consumption of crude rubber and reclaims in America for 1925 by quarterly periods afford interesting comparisons of the rubber requirements of the leading divisions of the industry. The following divisions show an increase in their consumption of crude rubber: tires, tubes, accessories, 43 per cent; mechanicals 30.7 per cent; insulated wire 11 per cent; heels and soles 41 per cent; miscellaneous goods 3 per cent. The divisions showing a diminution in their consumption of crude rubber used; boots and shoes 6 per cent; proofed goods 5 per cent, and hard rubber products 1 per cent.

The divisions showing the most marked advance as indicated by their rubber consumption are those supplying the public with their motor, footwear and general industrial needs as exemplified in tires, heels and rubber goods, such as belting, packing, hose, etc. Even those divisions that show a falling off in their use of crude rubber are all practically maintaining high averages.

Comparing the value of goods produced in 1925 with those produced in 1924 shows a gain in value of 19 per cent in hard rubber goods; a very small gain in value of proofed goods and a shrinkage in value of 7.7 per cent in the boot and shoe output.



U. S. Total Rubber Consumption, 1924 and 1925

The tonnages of crude rubber used in mechanical rubber goods, boots and shoes, heels and other products maintain the same relative rank as a year ago. The rapid gain in the output of heels and soles already gives that line fourth place in crude rubber consumption notwithstanding the heavy proportion of reclaimed used in their manufacture.

Consumption of reclaim to crude used averaged 28.4 per cent in 1925, and for the last two quarters exceeded 30 per cent. It will doubtless average higher in the future.

TABLE I—CRUDE RUBBER CONSUMPTION

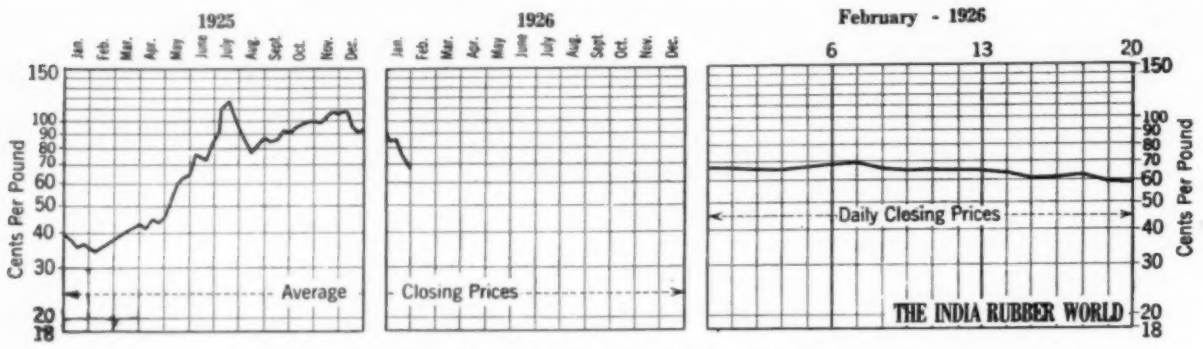
	1924								1925							
	1st Quarter		2d Quarter		3d Quarter		4th Quarter		1st Quarter		2d Quarter		3d Quarter		4th Quarter	
	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%
Tires, tubes, accessories	60,920	81.5	56,323	82.5	64,525	85.0	69,894	84.0	71,343	81.5	82,007	85.8	78,552	86.0	65,084	82.5
Mechanicals	4,085	5.5	3,149	4.7	3,337	4.5	3,774	4.5	5,339	6.0	4,884	5.0	4,398	4.8	4,128	5.2
Boots and shoes	3,930	5.25	3,494	5.2	2,559	3.5	3,843	4.5	3,890	4.5	2,603	2.7	2,870	3.0	3,840	4.8
All other products	5,913	7.75	5,141	7.6	5,011	7.0	5,880	7.0	7,070	8.0	6,277	6.5	5,714	6.2	5,874	7.5
Totals	74,848	100.00	68,107	100.0	75,432	100.0	83,391	100.0	87,642	100.0	95,771	100.0	91,534	100.0	78,926	100.0

Table I shows the consumption of crude rubber for each quarter by divisions of the rubber manufacturing industry for the years 1924 and 1925, inclusive. And also the percentages of the grand total consumed by the industry of each item of quantity consumption. The falling off in these percentages as noted for tires in the last quarter of 1925 can be safely attributed to the abnormal increase in prices that characterized the crude rubber market for the last half of 1925.

The same effect is shown by the graph comparing the trends of total rubber consumption for 1924 and 1925; where the curve in the last quarter falls off compared to the corresponding period of 1924 when the curve rose. The consumption for 1925 steadily advanced during the first six months, gaining nearly 30 per cent. In the third quarter it began to decline and in the fourth quarter consumption was 4,465 tons below that for the corresponding period of 1924.

TABLE II—CONSUMPTION OF RECLAIMS AND PROPORTION USED TO CRUDE RUBBER

	1925			
	First Quarter Tons	Second Quarter Tons	Third Quarter Tons	Fourth Quarter Tons
Reclaim	22,922	23,651	29,910	23,715
Crude rubber	87,642	95,771	91,534	78,926
Proportion reclaim to crude rubber	26.25%	24.5%	32.8%	30%



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New York

THROUGHOUT February the rubber market has been generally dull, featured by dealers' business rather than by that of the manufacturers. Consuming demand has been scattering and mostly for filling requirements of current production. At the beginning of the year factories were fully covered up to March 1 and had made half their rubber commitments for April-June. The rubber demand is held in check by the situation in which the manufacturers find themselves, in the matter of tire stocks. Until these heavy tire inventories are in strong movement they will continue to exert a stagnating influence on the crude rubber market. When this occurs the resumption of factory buying will probably attain sufficient volume to strongly influence the market upward. Manufacturers, however, have no apprehensions of a run-away market resulting because estimates of rubber production and consumption for the current year indicate that the crop will be ample for the world's manufacturing needs for a tire output equal to or even exceeding somewhat that of 1925, because of the dependence placed in the growing volume of high class reclaimed rubber. Thus tire manufacturers and dealers are cautiously awaiting developments without being greatly concerned over crude rubber supplies.

The recently organized Rubber Exchange of New York, Inc., which opened February 15, for trading in rubber futures, includes a large membership and is a logical step in placing the rubber trade on the advanced plane now occupied by other great staple commodities. The exchange affords protection against hazards of price changes and will doubtless be utilized by manufacturers who wish to protect their inventories of rubber and their commitments on futures by hedging. It is upon this function of the exchange, rather than its purely speculative operations, that its permanance and value to the trade will be based.

Reviewed by weekly periods the market shows no active features. The protests of rubber manufacturers and the flow of propaganda voiced in their behalf influenced the downward trend which set in about the middle of January and virtually killed active trading during the week ended January 30 in which business was much restricted and factory buying developed only small orders. Spot ribs opened at 67 cents buyers, 68 cents sellers and closed at 70 cents buyers, 70½ cents sellers.

The first week of February showed mixed conditions with little consuming demand and the trend of the market very uncertain. Spot ribs declined sharply to 62 cents buyers, 63 cents sellers, February 1, but recovered to 67 cents buyers, 68 cents sellers, February 6. General dullness of buying orders prevailed during the second week of the month, prices sagging as the week progressed, the week's range of prices opening at 67 cents buyers, 68 cents sellers and closing at 65 cents buyers, 66 cents sellers.

The third week ended February 20 was extremely dull due to gradually sagging London offers and diminishing factory buying interest which in some instances was displaced by factories reselling their contracts. Spot ribs were quoted at 63 cents buyers, 64 cents sellers February 15 and fell off to 58 cents buyers, 59 cents sellers February 20.

Spot first latex crêpe maintained a premium over spot ribs during the month averaging 1⅗ cents, the record standing at the close of each week at 1½, 2¼, 1½ and 3 cents repectively. Parás were quiet and dull in sympathy. Balatas were neglected.

Importations of all grades in January were 38,697 tons, compared with 29,960 tons one year ago. Plantation arrivals for January were 36,372 tons, compared with 28,480 tons one year ago. Estimates for February consumption are about 25,000 tons, while arrivals will undoubtedly reach 30,000 tons.

New York Spot Closing Rubber Prices

PRICES IN CENTS, PER POUND

PLANTATIONS	January, 1926												February 1926										
Sheet	18	19	20	21	22	23	25	26	27	28	29	30	1	2	3	4	5	6	8	9	10	11	*12	13
Ribbed Smoked	75½	76	74½	74⅛	73⅜	71½	67½	66½	67⅛	69¾	69½	68⅛	67	67⅛	66½	66⅛	67⅛	68½	69⅛	66¾	65¾	65½	....	65
Crêpe																								
First Latex	76¾	78	76	75	74¾	73	68¾	67½	68⅛	71½	72	70¾	69⅛	69½	69⅛	67¾	69	70⅛	70¾	68⅛	66¾	67	....	66¾
No. 2 blanket	73¾	74	72½	72	71⅝	70	65½	63¾	64	66¾	66¼	65½	64½	64¼	63½	63½	64½	65¾	66¾	64¼	63	63	....	62¾
No. 3 blanket	72¾	73⅛	72	71	70½	69	64½	63¼	63½	66⅛	65	64⅜	63	63	62½	62⅛	63½	65	66	63	61½	61⅜	....	61½
No. 4 blanket	70½	71	70	70	69½	68	62½	62	62	65	63¼	62¾	62	61¾	61½	61⅛	62½	64	64¾	61¾	60	60¼	....	60
Thin clean brown	72½	73¾	72	71	70½	68½	64½	63	63½	66¼	65½	64¾	63¼	63	62½	62½	63½	65	66¼	62¾	61½	62	....	61¼
Rolled brown	69	69½	68½	64	63½	62¼	59	57¾	59	62	61¼	60¼	58¼	58½	58½	58	58½	59½	60	58½	57	58½	....	57¾
Off latex	75¼	77	75	74	73½	71½	68¼	67	67½	70½	71	69¾	68¼	68½	68¼	66¼	68	69¼	69¼	67	65¾	66	....	65¾

* Holiday.

London

The 100 per cent of standard production set as exportable allowance effective February 1 served as a bearish sentiment and caused a sag in prices to 32¾*d* on that date. This was succeeded by an advance which reached 34*d* February 8. From that level, however, the price declined in the next two weeks to 29*d* on February 20. The influences were the persistence of absence of buying interest and speculative selling. London stocks have declined from their level January 25 of 10,142 tons to 9,121 tons February 22. The weekly record was as follows: February 1, 9,913 tons; February 8, 9,554 tons; February 15, 9,571 tons; February 22, 9,121 tons.

Singapore

In Singapore, as in London, the increase of the exportable allowance to 100 per cent on February 1 acted to depress prices to 30¾*d*. The market of that week was quiet and steady, awaiting foreign support. This materialized the first of the following week advancing the price to 32½*d*. This price promptly declined to 30½*d*. The week closed with a holiday intermission of two days. The following week the price continued downward due to London selling on decline, and at the week's end the price was easy at 27¾*d*.

Comparative Low and High New York Spot Rubber Prices

	February							
PLANTATIONS	1926*			1925			1924	
First latex crêpe	$0.57	@	$0.70	$0.34¼	@	$0.38	$0.25	@ $0.26½
Smoked sheet, ribbed	.55½	@	.69	.34⅜	@	.37	.25	@ .26
PARAS								
Upriver, fine	.48	@	.63	.31½	@	.33¼	.19¼	@ .20¾
Upriver, coarse	.30	@	.50	.25¾	@	.26¾	.17	@ .17¼
Islands, fine	.43	@	.57	.28¾	@	.29½	.18¼	@ .18¾
Cametá	.33	@	.39	.16½	@	.17½	.11	@ .11½

*Figured to February 20, 1926.

British Malaya

Rubber Exports

An official cablegram from Singapore to the Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, states that the amount of rubber expected from British Malaya in the month of January last totaled 30,462 tons. The amount of rubber imported was 10,237 tons, of which 7,727 tons were declared as wet rubber.

The following are comparative statistics:

	1925		1926	
	Gross Exports Tons	Foreign Imports Tons	Gross Exports Tons	Foreign Imports Tons
January	19,183	10,132	30,462	10,237

Distribution

The following is a comparative return of distribution of shipments during the months of December, 1925, and January, 1926:

	December, 1925 Tons	January, 1926 Tons
United Kingdom	5,790	5,364
United States of America	20,761	22,417
Continent of Europe	1,993	1,548
British Possessions	526	540
Japan	766	577
Other foreign countries	27	6
Totals	29,863	30,452

Dealers' Stocks of Rubber

An official cablegram from Singapore to the Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, states that dealers' stocks of rubber on December 31, 1925, were in Singapore 16,256 tons, and in Penang 2,584 tons.

CUBA ENCOURAGES RUBBER PLANTINGS

It is reported that the Cuban Government is encouraging the growing of rubber in that country by establishing a bounty of 50 cents for every successfully grown rubber tree. The weather and soil conditions in Cuba are said to be favorable for rubber plantings.

New York Quotations

Following are the New York spot and future rubber quotations, for one year ago, one month ago, and February 23, the current date:

	February 24, 1925		January 23, 1926		February 23, 1926	
Plantation Hevea						
Rubber latex (Hevea)....*gal.*	$1.25	@	$2.50	@	$2.50	@
CRÊPE						
First latex, spot	.37⅜	@.37⅝	.71	@.72	.57	@.58
Feb.-Mar.	.36¾	@	.71	@	.57	@.58
Apr.-June	.35½	@	.68	@.69	.55	@.56
July-Sept.	.36	@	.64	@.65	.54	@.55
July-Dec.	.35¾	@	.63	@.64	.53	@.54
Off latex, spot	.37	@	.70	@.72	.56	@.57
Amber No. 2, spot	.36¼	@	.69	@.70	.54	@.55
Feb.-Mar.	.36¼	@	.68	@	.53	@.54
Apr.-June	.36	@	.67	@.68	.52	@.53
July-Sept.	.35¾	@	.63	@.64	.51	@.52
July.-Dec.	.35	@		@	.50	@.51
Amber No. 3, spot	.36	@	.69	@.70	.52½	@.53½
Brown, thin, clean	.36⅛	@	.68	@.68½	.51	@.52
Brown, specky	.35¾	@	.67	@.68	.50	@
Brown, roll	.34¾	@	.62	@.63	.48	@
Sole crêpe	.47	@.48	.95	@	1.00	@
SHEET						
Ribbed, smoked, spot	.37⅛	@	.70	@.70½	.55½	@.56½
Feb.-Mar.	.36¾	@	.69	@.70	.55½	@
Apr.-June	.36½	@	.67	@.67½	.54½	@.55½
July-Sept.	.36	@	.63	@.64	.53	@.54
July-Dec.	.35½	@		@	.52	@.53
East Indian						
PONTIANAK						
Banjermassin	.08½	@	.18	@	.17½	@
Palembang		@		@		@
Pressed block	.14	@	.28	@	.29	@
Sarawak	.07¼	@	.18	@		@
South American						
PARAS						
Upriver, fine	.32	@	.62	@.63	.48	@
Upriver, fine	*.43½	@	*	@	*.69	@
Upriver, medium	.30½	@	.55	@		@
Upriver, coarse	.26¾	@	.50	@.51	.37	@
Upriver, coarse	*.36¾	@	*	@	*.54	@
Islands, fine	.30	@	.50	@.51		@
Islands, fine	.28	@	*	@	*.65	@
Cametá	.25½	@	.40	@.41	.36	@
Acre, Bolivian, fine	.32	@	.60	@	.49	@
Acre, Bolivian, fine	*.43¼	@	*	@	*.70	@
Beni Bolivian	.32¼	@	.61	@	.49	@
Madeira	.33	@		@	.49	@
Peruvian, fine	.30	@	.58	@		@
Tapajos, fine	.31	@		@	.47	@
CAUCHO						
Upper caucho ball	.27	@	.52	@	.38	@
Upper caucho ball	*.36¾	@	*	@	*.55	@
Lower caucho ball	.25½	@	.53	@	.36	@
Maniçobas						
Ceará negro heads	.24	@	†.55	@	.40	@
Ceará scrap	.10	@	†.35	@	.12	@
Maniçobas 30% guaranty	.26	@	†.55	@	.42	@
Mangabeira, thin sheet	.27	@	†.60	@	.42	@
Centrals						
Central scrap	.25	@	.45	@.47	.42	@
Central wet sheet		@	.35	@	.32	@
Corinto scrap	.26½	@	.48	@.49	.42	@
Esmeralda sausage	.26	@	.48	@.49	.42	@
Guayule washed and dried	.32	@	.54	@	.50	@
Africans						
Black Kasai	.24	@	.60	@	†.50	@
Black Upper Congo	.22	@	.58	@	†.48	@
Red Upper Congo	.20	@	.56	@	†.46	@
Kasai Loanda		@		@		@
Upper Congo Arumini		@		@		@
Masai (Kovakry)		@		@		@
Gutta Percha						
Gutta Siak	.18¼	@	.29	@.30	.33	@
Gutta Soh	.28	@	.31	@		@
Red Macassar	3.25	@	3.00	@	3.50	@
Balata						
Block, Ciudad Bolivar	.61½	@	.63	@.64	.65	@
Colombia	.50½	@	.52	@.53	.53	@
Panama	.50½	@	.50	@.51	.53	@
Surinam, sheet	.77	@	.71	@.74	.75	@
amber		@	.79	@.80	.83	@
Chicle						
Honduras	‡.58	@.68	‡.64	@	‡.64	@
Yucatan	‡.58	@.68	‡.65	@	‡.65	@

*Washed and dried crêpe. Shipment from Brazil.
†Nominal. ‡Duty paid.

Reclaimed Rubber

New York

The demand for reclaims continues to develop record proportions notwithstanding the decline in crude rubber and probably has been a factor in aiding that decline. The reductions in prices noted in this month's quotations are readjustments in conformity with the new prices for rubber scrap corresponding with lower values asked for crude rubber.

Tire dealers in the large metropolitan centers are said to be generally of the opinion that consumer demand this year will run from a third to a half on second quality tires, in other words, to tires containing a fair proportion of high grade reclaim. With this tendency in view, the reclaimers anticipate continuation of record demand for their products.

New York Quotations

February 23, 1926

	Specific Gravities	Price Per Pound
Auto Tire		
Black	1.21	$0.11 @ $0.11⅛
Black, washed	1.18	.12½ @ .12¾
Black selected tires	1.20	.12¾ @ .13
Dark gray	1.35	.16½ @ .16⅝
Light gray	1.38	.18¼ @ .18½
White	1.40	.22½ @ .23
High Tensile Black		
Super-reclaim, No. 1	1.20	.32 @ .33
No. 2	1.20	.20½ @ .21
Shoe		
Unwashed	1.60	.10½ @ .10¾
Washed	1.50	.13 @ .13¼
Tube		
No. 1	1.00	.30 @ .31
No. 2	1.18	.20 @ .21
Uncured Tire Friction		
No. 1	1.00	.55 @ .58
No. 2	1.20	.45 @ .48
Miscellaneous		
High grade, red	1.35	.23 @ .23⅛
Truck tire, heavy gravity	1.55	.10½ @ .11
Truck tire, light gravity	1.40	.11 @ .11½
Mechanical blends	1.60	.08 @ .09

Plantation Rubber Exports from Dutch East Indies

Java and Madura

To—	September 1924 Kilos	September 1925 Kilos	Nine Months Ended September 1924 Kilos	Nine Months Ended September 1925 Kilos
Holland	123,000	156,000	1,932,000	1,504,000
Holland for order	51,000	142,000	819,000	1,721,000
Great Britain	447,000	598,000	5,161,000	5,370,000
Great Britain for order	5,000	13,000	64,000	320,000
Germany and for order	4,000	98,000	270,000	1,194,000
France and for order	1,000	96,000	250,000	469,000
Belgium and for order	5,000	13,000	14,000	175,000
Italy and for order	25,000	81,000	289,000	512,000
Sweden	.....	.....	.....	3,000
United States and for order	3,168,000	1,936,000	20,787,000	21,565,000
South America	.....	9,000	.....	202,000
Singapore	146,000	127,000	2,150,000	1,173,000
Hongkong	.....	.....	27,000	3,000
Japan	.....	3,000	687,000	68,000
Australia	3,000	147,000	239,000	591,000
Other countries	.....	.....	.....	3,000
Totals	3,978,000	3,419,000	32,689,000	34,873,000
Ports of Origin:				
Tandjong-Priok	1,692,000	1,613,000	12,562,000	14,545,000
Cheribon	.....	6,000	56,000	34,000
Samarang	302,000	285,000	2,347,000	2,597,000
Sourabaya	1,473,000	1,046,000	13,104,000	12,565,000
Pasuruan	102,000	96,000	1,003,000	885,000
Probolinggo	152,000	66,000	946,000	783,000
Panarukan	134,000	122,000	1,082,000	1,558,000
Banjuwangi	82,000	59,000	708,000	797,000
Tjilatjap	41,000	125,000	881,000	1,091,000

Belawan

To—	September 1924 Kilos	September 1925 Kilos	Nine Months Ended September 1924 Kilos	Nine Months Ended September 1925 Kilos
Holland	137,000	147,000	1,370,000	1,578,000
Great Britain	601,000	585,000	3,459,000	5,415,000
Germany	15,000	52,000	278,000	410,000
France	34,000	111,000	236,000	338,000
Italy	20,000	27,000	217,000	305,000
Belgium	.....	.....	27,000	14,000
United States	3,314,000	2,043,000	21,836,000	14,910,000
Canada	.....	9,000	.....	9,000
South Africa	.....	.....	.....	14,000
Singapore	60,000	89,000	713,000	788,000
Penang	94,000	209,000	703,000	1,516,000
Hongkong	.....	.....	.....	10,000
Australia	5,000	15,000	17,000	77,000
Other countries	2,000	.....	119,000	.....
Totals	4,282,000	3,287,000	28,975,000	25,384,000

The Market for Rubber Scrap

New York

A month ago the prices for rubber scrap fluctuated somewhat and reclaimers withdrew from the market, owing to the abrupt drop in crude rubber prices. Later in the month buying of all stocks resumed activity with the downward revision of prices on hard rubber, tubes and tire grades. Scrap and reclaims are cheap at present levels even though crude was down to 35 cents. The prospect is good for continued large movement of scrap for domestic use. There is nothing doing in export of scrap, in fact, the tendency is to import.

BOOTS AND SHOES. Prices remain unchanged from a month ago and present demand is such that shoes are moving very slowly.

INNER TUBES. Tubes are very active. The quotations on all grades are somewhat lower than last month. No. 1 floating has made the greatest decline.

MECHANICALS. These qualities are unchanged in price except hose of all kinds which advanced to $30 without spread.

MIXED TIRES. These are very active, with reductions in quotations applying to most grades.

TRUCK TIRES. These have advanced to $60 a ton and are displacing shoes for certain purposes owing to their very good value.

Quotations for Carload Lots

February 23, 1926

Boots and Shoes		
Boots and shoes, black	lb.	$0.02¾ @ $0.02¼
Red and white	lb.	.01¾ @ .01⅞
Trimmed arctics, black	lb.	.02½ @ .02¼
Untrimmed arctics	lb.	.01½ @ .01¾
Tennis shoes and soles	lb.	.01½ @ .01¾
Hard Rubber		
No. 1 hard rubber	lb.	.14 @ .16
Battery jars, black compound	lb.	.02¼ @ .02½
Inner Tubes		
No. 1, floating	lb.	.11 @ .11½
No. 2, compounded	lb.	.09¼ @ .09½
Red	lb.	.08 @ .08¼
Mixed tubes	lb.	.08 @ .08¼
Mechanicals		
Mixed black scrap	lb.	.01¼ @ .01½
Heels	lb.	.01 @ .01⅜
Hose, air-brake	ton	30.00 @
regular	ton	20.00 @ 21.00
No. 1 red	lb.	.03½ @ .03¼
No. 2 red	lb.	.01½ @ .02¼
Red packing	lb.	.01¾ @ .01½
White, druggists' sundries	lb.	.03¾ @ .04
Mechanical	lb.	.02¼ @ .03¼
Tires		
Pneumatic Standard—		
Mixed auto tires with beads	ton	32.00 @ 33.00
Beadless	ton	42.00 @ 43.00
White auto tires with beads	ton	45.00 @ 48.00
Beadless	ton	66.00 @ 68.00
Mixed auto peelings	ton	48.00 @ 52.00
Solid—		
Mixed motor truck, clean	ton	55.00 @ 60.00

The Market for Chemicals and Compounding Ingredients

New York

MANUFACTURING activity in all branches of the rubber industry is being maintained at better than seasonal volume as indicated by the large and steady demand for compounding ingredients, much of which applies against contracts covering the first quarter's needs. Spot demand for standard ingredients is also good and prices in general are steady.

ACCELERATORS. The general use of vulcanization accelerators is now well established in the industry and quite as indispensable as sulphur itself. Rubber manufacturers are now sufficiently versed in their use to make advantageous selection of accelerators on the basis of their adaptability to special needs, from the long list available.

BENZOL. This is in fair supply. The price is less firm than a month ago and declined slightly. The demand for all grades is good.

CARBON BLACK. Carbon black industry centers in Monroe County, Louisiana, where the manufacturers are confronted with continued rigid control of their consumption of gas. There is a good contract movement of black with prices unchanged though tending to higher levels.

CLAY. The demand for high grade compounding clay is well maintained. Its value as a reenforcing material in the production of good wearing stocks is especially appreciated in the tire, heel, shoe and mechanical goods lines.

LITHARGE. Since the first of the year the market has remained quiet with prices unchanged.

LITHOPONE. The past month demand was fair to good. Production is contracted for several months in advance.

MINERAL RUBBER. This material is growing in popularity, stimulated in some measure by its availability as a substitute for high priced rubber in many lines of goods.

SOLVENT NAPHTHA. This solvent has its place in the proofing trade and is so greatly in demand in other industrial lines as well that its price continues to hold at a high level because of the short supply.

SUBLIMED LEAD. The general tendency seems to be to hold off and refrain from stocking far in advance.

ZINC OXIDE. Stocks and output are booked six months ahead. Rubber makers are not relatively as large consumers as they were some years ago but their total tonnage is still a factor of much importance, and is increasing.

New York Quotations

February 23, 1926

Accelerators, Inorganic			
Lead, carbonate	lb.	$0.10¾	@
Lead, red	lb.	.12¼	@
sublimed blue	lb.	.10	@
sublimed white	lb.	.10	@
Lime, R. M. hydrated	ton	15.00	@ 25.00
Litharge	lb.	.11¾	@
Magnesia calcined, light, (bbls.)	lb.	.06½	@
calcined, md. light (bbls.)	lb.	.05½	@
calcined, extra light (bbls.)	lb.	.40	@
calcined, heavy (bbls.)	lb.	.04½	@
magnesium, carb., light (bags)	lb.	.06½	@ .06¾
Orange mineral A.A.A.	lb.	.14½	@
Rubber lead No. 4	lb.		@
Accelerators, Organic			
A-7	lb.	.75	@ .85
A-19	lb.	.85	@ .95
Aldehyde ammonia	lb.	.82	@ .95
Aniline (factory)	lb.		@
B. B.	lb.	1.05	@ 1.07
D. P. G. salt	lb.	.89	@
Diethyl amine	lb.		@
Dimethyl amine	lb.		@
Di-ortho-tolylguanidine	lb.	1.08	@
Diphenyl guanidine	lb.	.85	@ .88
Ethylidine aniline	lb.	.65	@
Formaldehyde aniline	lb.	.42	@ .42½
Grasselerator 808	lb.	1.25	@ 1.50
Heptene	lb.	.55	@
Hexamethylene tetramine	lb.	.80	@ .85
Lead oleate (fact'y)	lb.	.16	@ .18
Methylene aniline	lb.	.32	@ .40
Monex	lb.		@
No. 999	lb.	.17½	@
No. 552 Piperidine piperidyl-dithio-carbamate	lb.	4.80	@ 5.00
Para-nitrosodimethylaniline	lb.		@
Paraphenylene diamine	lb		@
Quinodine	lb.		@
Super-sulphur, No. 1	lb.	.50	@
No. 2	lb.	.18	@ .25
Tensilac No. 39	lb.	.65	@ .70
No. 41	lb.	.65	@
Thiocarbanilide	lb.	.26	@ .32
Trimene	lb.	1.20	@ 1.35
base	lb.		@
Triphenylguanidine	lb.	.73	@
Tuads	lb.	4.50	@ 5.00
Zimate	lb.	5.00	@

Acids			
Acetic 28% (bbls.)	100 lb.	$3.50	@
glacial (carboys)	100 lb.	11.71	@
Oleic	lb.	.10½	@ .10¾
Sulphuric, 66° (carboys)	lb.	.01¾	@ .02
Alkalies			
Caustic soda	100 lbs.	3.10	@ 3.91
Anti Oxidants			
Agerite	lb.	.85	@ .90
V. G. B.	lb		@
Colors			
BLACK			
Bone	lb.	.05½	@ .11
Carbon			
A. & W. nonfl.	lb.	.40	@
Aerfloted arrow	lb.	.09	@ .13
Compressed	lb.	.09½	@ .13½
Uncompressed	lb.	.09	@ .13
Micronex	lb.	.10	@ .14
Drop	lb.	.07½	@ .14
Lampblack	lb.	.12	@ .40
Thermatomic carbon	lb.	.05	@
BLUE			
A. & W. blue	lb.	2.00	@
Prussian	lb.	.34	@ .35
Ultramarine	lb.	.09	@ .35
BROWN			
Sienna, Italian	lb.	.04	@ .14
Umber, Turkey	lb.	.04	@ .06
GREEN			
A. & W. green	lb.	2.00	@
Chrome, light	lb.	.29	@ .31
medium	lb.	.30	@ .32
dark	lb.	.31	@ .33
Oxide of chromium	lb.	.38	@
RED			
A. & W. red (4 shades)	lb.	2.50	@
purple	lb.	2.00	@
Antimony, golden	lb.	.16	@
golden T. K.	lb.		@
golden 15/17 % G. E.	lb.	.20	@

RED—Continued			
Antimony, crimson	lb.	$0.27	@
crimson T. K., 15/17%	lb.		@
crimson T. K., S/F.	lb.		@
crimson, R.M.P. No. 3.	lb.	.50	@
7-A	lb	.38	@
Z-2	lb	.20	@
Sulphuret vermilion	lb.	.37½	@
Iron Oxides			
bright red pure domestic	lb.	.12	@
bright red pure English	lb.	.14	@
bright red reduced English	lb.	.11	@
bright red reduced domestic	lb.	.10	@
Indian (maroon), red pure domestic	lb.	.11	@
Indian (maroon), red pure English	lb.	.11½	@ .12
Indian (maroon), red reduced English	lb.	.10	@
Indian (maroon), red reduced domestic	lb.	.08	@
Oximony	lb.	.13¼	@
Spanish red oxide	lb.	.04	@
Venetian reds	lb.	.02¼	@ .05
Vermilion, English quicksilver	lb.	1.57	@
WHITE			
Albalith	lb.	.05½	@ .06⅛
Lithopone	lb.	.06¼	@
Azolith	lb.	.05½	@ .06⅛
Sterling	lb.	.05⅛	@ .06⅛
Zinc oxide			
AAA (lead free)	lb.	.07¼	@ .07¾
Azo (factory):			
ZZZ (lead free)	lb.	.07¼	@ .07¾
ZZ (5% leaded)	lb.	.06⅞	@ .07⅜
Z (8% leaded)	lb.	.08	@ .08⅛
French Process			
Green seal	lb.	.11⅝	@
Red seal	lb.	.10⅝	@
White seal	lb.	.12⅛	@ .12⅝
Horse Head Brands			
Selected	lb.	.07¾	@ .08¼
Special	lb.	.07¾	@ .08¼
XX red	lb.	.07¼	@ .07¾
Leaded Brands			
Lehigh	lb.	.08	@ .08½
Standard	lb.	.06⅞	@ .07¼
Sterling	lb	.08	@ .08½
Superior	lb.	.08	@ .08½
Palmerton Process			
Kadox, black	lb.	.10¾	@ .11⅛
blue	lb.	.09¾	@ .10⅛
red	lb.	.08¾	@ .09⅛

Colors—*Continued*

YELLOW

A. & W. yellow	*lb.*	$2.50	@
Arsenic	*lb.*	.70 @	.75
Chrome	*lb.*	.17½ @	.18½
Ochre, domestic	*lb.*	.01¾ @	.02½
imported	*lb.*	.04¼ @	.04½
Oxide, pure	*lb.*	.08 @	.10

Compounding Ingredients

Aluminum flake (sacks c.l.)	*ton*		@
(sacks l.c.l.)	*ton*		@
Aluminum silicate	*ton*		@
Ammonia carbonate	*lb.*	.11 @	.12
Asbestine	*ton*	13.50 @	25.00
Barium, carbonate	*ton*	45.00 @	50.00
dust	*lb.*	.05 @	.06
Barytes, imported	*ton*	30.00 @	
water ground and floated	*ton*	23.00 @	25.00
Basofor	*lb.*	.04½ @	
Blanc fixe, dry	*ton*	75.00 @	78.00
pulp	*ton*	54.00 @	57.00
Carrara filler	*ton*	26.00 @	
Chalk	*ton*	@	
Clay, Dixie	*ton*	20.00 @	
Blue ribbon (c. l. fcty.)	*ton*	14.00 @	
Blue Ridge, dark	*ton*	9.00 @	
light	*ton*	12.00 @	
Catalpo (facty.)	*ton*	37.00 @	38.00
China	*ton*	15.00 @	
Langford	*ton*	12.00 @	
Mineral Flour (Florida)	*ton*	@	
Seminole (Georgia)	*ton*	@	
Suprex	*ton*	20.00 @	30.00
Tuscan	*ton*	12.00 @	
White floss	*ton*	18.00 @	
Cotton flock, black	*lb.*	.12 @	
light-colored	*lb.*	.12 @	
white	*lb.*	.15 @	.30
Cotton linters clean mill run	*lb.*	@	
Glue, high grade	*lb.*	.20 @	.29
medium	*lb.*	.18 @	.24
low grade	*lb.*	.12 @	.14
Infusorial earth	*ton*	40.00 @	
Mica, amber (fact'y)	*lb.*	.05 @	
Pumice stone, powd.	*lb.*	.03 @	.05
Rotten stone (bbls.)	*lb.*	.02½ @	.04½
Slate flour (fact'y c. l.)	*ton*	@	
Soap bark	*lb.*	.12 @	
Soapstone	*ton*	15.00 @	22.00
Sodium bicarb	100 *lbs.*	2.00 @	
Starch, powd. corn			
Buffalo (bbls.)	100 *lbs.*	3.29 @	3.39
Buffalo (bags)	100 *lbs.*	3.02 @	3.12

Chemical Market—*Continued*

New York Quotations

February 23, 1926

Compounding Ingredients—*(Continued)*

Talc, domestic	*lb.*	$0.01¼ @	
Terra blanche	*ton*	@	
Whiting, alba	*ton*	12.00 @	
chalk	*ton*	20.00 @	25.00
commercial (facty.) 100	*lbs.*	1.00 @	1.15
English, cliffstone	100 *lbs.*	1.50 @	
Nelco	*ton*	12.00 @	22.50
Quaker	*ton*	13.00 @	
Sussex	*ton*	8.00 @	
Westminster Brand	100 *lbs.*	1.50 @	2.50
Witco (c.l.) (fact'y)	*ton*	12.00 @	
Wood pulp, XXX (facty.)	*ton*	35.00 @	
X (facty.)	*ton*	25.00 @	

Mineral Rubber

Genasco (facty.)	*ton*	50.00 @	52.00
Gilsonite (fact'y)	*ton*	37.14 @	39.65
Granulated M. R.	*ton*	33.00 @	38.00
Hydrocarbon, hard	*ton*	29.00 @	35.00
Hydrocarbon, soft	*ton*	29.00 @	35.00
Ohmlac Kapak, M-R	*ton*	@	
K-4	*ton*	@	
320/340 m. p. hydrocarbon	*ton*	47.00 @	52.00
300/310 m. p. hydrocarbon	*ton*	42.00 @	47.00
Paradura (fact'y)	*ton*	70.00 @	72.50
Pioneer, M. R., solid (fac.)	*ton*	@	
M. R. granular	*ton*	@	
Robertson, M. R. solid			
(facty.)	*ton*	35.00 @	75.00
M. R. gran. (facty.)	*ton*	42.00 @	80.00

Oils (Softeners)

Castor, No. 1, U. S. P.	*lb.*	.14 @	
No. 3, U. S. P.	*lb.*	.13½ @	
Corn, crude (bbls.)	*lb.*	.11¼ @	
Cotton, summer yellow	*lb.*	.12 @	
Cycline	*gal*	.30 @	.38
Glycerine	*lb.*	.27 @	
Linseed, raw	*gal.*	.10½ @	.12
Liquid rubber	*lb.*	.12 @	
Palm lagos	*lb.*	.09 @	
niger	*lb.*	.08½ @	
Peanut, crude	*lb.*	.11½ @	
refined	*lb.*	.14 @	
Petrolatum, standard	*lb.*	.06 @	.08
sticky	*lb.*	.08 @	.10
Pine, steam distilled	*gal.*	.68 @	
Rapeseed, refined	*gal.*	.91 @	
Rosin	*gal.*	.65 @	
Synthecite	*lb.*	.06 @	
Tar	*gal.*	.36 @	

Resins and Pitches

Pitch, Burgundy	*lb.*	.07½ @	
coal tar	*lb.*	.02 @	
Fluxol hardwood	*lb.*	.02 @	.04
pine tar	*lb.*	.04 @	
ponto	*lb.*	.07½ @	

Resins and Pitches—*(Continued)*

Rosin, K (bbl.)	280 *lbs.*	$15.70	@
strained (bbl.)	280 *lbs.*	13.00	@
Shellac, fine orange	*lb.*	.70	@
Tar, pine, retort	*bbl*	18.00	@
kiln	*bbl.*	21.00	@

Solvents

Benzol (90%, 7.31 lbs. gal.) pure	*gal.*	.29 @	
Carbon bisulphide (10.81 lbs. gal.) 99.9% pure (drums)	*lb.*	.05½ @	.06¼
tetrachloride (13.28 lbs. gal.) 99.7% pure (drums)	*lb.*	.07 @	.08
Gasoline No. 303			
Tankcars	*gal.*	.22 @	
Drums, c. l.	*gal.*	.25 @	
Drums, l. c. l.	*gal.*	.28 @	
Naphtha			
68° Bé., 122°, 524°	*gal.*	.20½ @	
70° Bé., 114°, 314°	*gal.*	.21½ @	
71° Bé., 112°, 304°	*gal.*	.22½ @	
Turpentine, spirits	*gal.*	1.03 @	
wood, steam distilled	*gal.*	.95 @	

Substitutes

Black	*lb.*	.08½ @	.14
Brown	*lb.*	.09 @	.16
White	*lb.*	.09 @	.17

Vulcanizing Ingredients

Sulphur chloride (drums)	*lb*	.04½ @	.05
Soft rubber, 100% pure (c.l.)	100 *lbs.*	2.50 @	2.75
(l.c.l.)	100 *lbs.*	2.80 @	3.30
Sulphur, Brooklyn brands			
Refined velvet (bbls.)	240 *lbs.*	3.05 @	3.30
(bags)	150 *lbs.*	2.80 @	3.05
Superfine flour (bbls.)	210 *lbs.*	2.65 @	2.95
(bags)	100 *lbs.*	2.30 @	2.60
Tire brand, superfine	100 *lbs.*	@	
Tube brand, velvet	100 *lbs.*	@	

(See also Colors—Antimony)

Waxes

Wax, beeswax, white, com.	*lb.*	.55 @	
carnauba	*lb.*	.36 @	.50
ceresine, white	*lb.*	.12½ @	
montan	*lb.*	.08 @	
ozokerite, black	*lb.*	.30 @	
green	*lb.*	.32 @	
Paraffin			
122/124 white crude scale	*lb.*	.05¼ @	
124/126 white crude scale	*lb.*	.05⅞ @	
120/122 fully refined	*lb.*	.06 @	
125/127 fully refined	*lb.*	.06¼ @	

Inventory—Production—Shipments of PneumaticCasings—Inner Tubes—Solid Tires—Rubber and Fabric Consumption

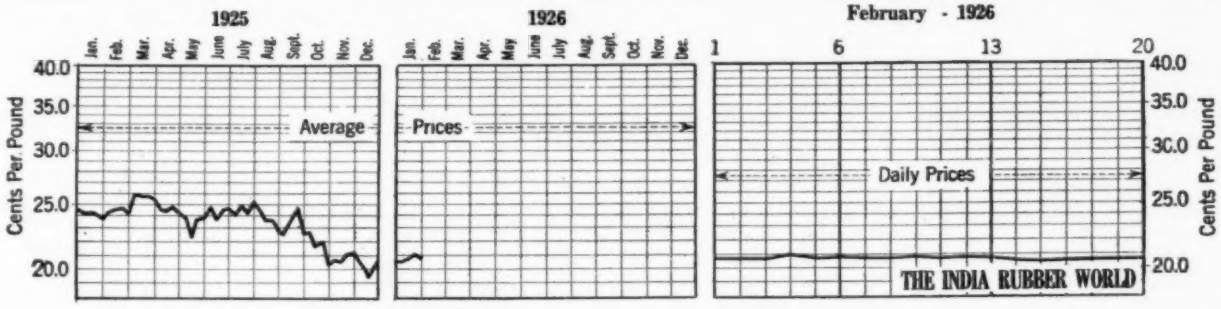
	High Pressure Pneumatic Casings					
	Cord			Fabric		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January	3,562,701	1,999,410	1,618,169	1,498,309	1,009,201	908,260
February	4,108,082	1,996,488	1,458,136	1,710,425	944,168	718,626
March	4,369,673	2,000,939	1,708,352	1,836,228	738,625	616,350
April	4,035,061	1,816,641	2,012,794	1,700,699	562,449	661,907
May	3,610,304	1,815,969	2,266,073	1,461,301	480,339	714,728
June	2,870,827	1,894,704	2,610,409	1,033,840	439,397	869,058
July	2,502,055	2,181,645	2,479,160	658,814	447,145	809,290
August	2,895,254	2,409,070	1,999,548	527,108	377,813	516,985
September	3,227,418	2,173,276	1,826,432	482,179	347,037	429,438
October	2,957,380	1,832,554	2,141,424	382,734	346,163	440,619
November	3,082,241	1,634,710	1,299,843	458,124	336,895	259,008
December	3,723,296	1,876,401	1,265,593	607,681	404,633	267,339

	Balloon Casings			Solid and Cushion Tires		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January	901,031	546,146	563,315	196,774	52,464	44,814
February	877,851	740,106	764,874	191,733	53,058	55,646
March	926,303	1,217,367	1,168,277	175,010	56,751	69,833
April	1,080,594	1,626,369	1,448,974	166,389	66,059	70,950
May	1,386,840	1,803,607	1,484,877	156,175	75,473	86,785
June	1,527,684	1,729,121	1,573,062	153,098	85,036	90,942
July	1,654,629	1,561,806	1,434,981	152,587	75,228	74,715
August	2,023,580	1,418,347	1,053,625	170,419	75,166	57,117
September	2,051,377	1,235,022	1,171,157	181,240	65,309	51,633
October	1,662,673	1,200,389	1,602,880	168,712	50,365	70,066
November	1,675,995	1,200,399	1,194,457	156,180	46,646	59,959
December	1,775,428	1,288,965	1,167,658	148,080	57,345	67,935

	High Pressure Inner Tubes			Balloon Inner Tubes		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January	7,756,467	4,171,812	3,643,841	920,728	585,243	528,533
February	8,815,514	3,977,721	2,989,606	951,539	776,855	738,734
March	9,540,993	3,895,688	3,120,624	1,135,649	1,354,434	1,162,910
April	8,726,603	3,259,524	3,556,258	1,486,546	1,879,007	1,471,976
May	7,535,418	3,225,218	4,513,460	1,840,425	1,908,973	1,516,774
June	5,910,609	3,566,099	5,173,477	1,896,178	1,640,465	1,600,410
July	4,677,647	4,297,495	5,357,295	1,798,919	1,360,719	1,497,747
August	4,970,360	4,436,578	4,102,160	1,982,971	1,276,717	1,089,752
September	5,351,879	4,135,336	3,801,442	2,110,958	1,304,857	1,197,397
October	4,742,309	3,653,711	4,227,167	1,802,436	1,305,315	1,656,446
November	5,309,395	3,430,209	2,798,821	1,809,105	1,269,137	1,255,966
December	6,489,331	3,814,617	2,603,165	1,995,277	1,434,796	1,140,054

Compiled from Rubber Association figures.

	Cotton and Rubber Consumption Castings, Tubes, Solid and Cushion Tires	
1925	Cotton Fabric Pounds	Crude Rubber Pounds
January	12,310,822	42,170,869
February	13,363,986	41,720,847
March	15,040,609	46,365,630
April	14,902,337	48,154,633
May	14,984,561	47,639,298
June	15,840,498	53,366,781
July	16,013,761	53,197,164
August	15,758,123	52,170,657
September	14,025,320	46,745,268
October	12,446,040	42,211,384
November	11,348,919	38,875,816
December	12,260,951	39,770,925



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Other Fabrics

New York

AMERICAN COTTON. Throughout the month the market for spot middlings has ruled dull without definite trend of prices. Weather conditions are considered very satisfactory as preliminary to the start of the new crop. The spot price has deviated less than one quarter of a cent above and below 20.75 cents practically the entire month.

The trade now is giving much attention to the acreage to be planted for the coming crop. Much stress is being brought to bear on the farmer by different organizations of bankers and merchants to have him reduce, but this plan has been tried every year with but little or no success and it is a question as to whether it will have any effect this year. The Department of Agriculture will not issue its report on acreage and conditions until July 2 this year instead of June as heretofore. This change is made to eliminate revisions later in the year.

Broadly speaking, the market is in the transition stage from the influence of the old crop to the influence of the new crop. For the moment, the old crop is the dominating factor. In this respect, the whole question revolves around the attitude of southern holders or mills who have already purchased large quantities of cotton equal in grade to contract delivery. Some of the latter are showing signs of desiring to switch out of their better cottons into lower grades.

This is reported to be particularly so in that portion of the mill trade which manufactures cloth for tire purposes. It is said that tire manufacturers are finding that they can use off-colored cottons, providing the staple is good, for tire cloth, because in manufacturing tires, the color of the cloth upon which the rubber is placed has no bearing on the situation, providing that the tensile strength is present. Also, the price of the low grades is so much below the price of the better grades, amounting in many cases to as much as $25 to $30 a bale that consumers are turning to the use of these off-colored cottons, wherever it is at all possible to mix them with better grades.

EGYPTIAN COTTON. The Egyptian market has weakened steadily since the January Sak option went out. During the week ending January 26 the Egyptian government bought 6,000 bales of Sak in an effort to support declining prices, but without any effect. Little interest has been shown in Egyptians either in this or foreign countries and prices of both prompt shipment and futures show little change.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. The market is becoming more active and demand for quick delivery goods brisk, with growing inclination to renew the placing of contracts to cover the next quarter.

TIRE FABRIC. The market is quiet but some filling in orders have been placed for March and April delivery. There are some indications on the part of companies to produce a larger proportion of second grade tires to conserve rubber. This has increased the demand for square woven fabrics which has surprised the fabric trade in general.

The market comment regarding several of the recent purchases of fabric mills by tire manufacturing companies was that it did not cost the tire companies much more to buy these mills than it would for them to complete their cost plus contracts for fabric. The opinion has been expressed that the 10 largest tire producers plan eventually to control at least 75 per cent of tire fabric production which they consume. These companies have a combined potential tire output of 200,000 tires daily which constitutes the bulk of the country's tire making capacity.

New York Quotations

February 23, 1926

Drills

38-inch 2.00-yard	yard	$0.19½@
40-inch 3.47-yard		.11½@
52-inch 1.90-yard		.21½@
60-inch 1.52-yard		.26⅝@

Ducks

38-inch 2.00-yard	yard	.20 @
40-inch 1.47-yard		.26⅞@
72-inch 16.66-ounce		.44¾@
72-inch 17.21-ounce		.46¼@
MECHANICAL		
Hose and belting	pound	.38 @
Specials		.42 @
TENNIS		
52-inch 1.35-yard	yard	.32 @

Hollands

DEAD FINISH		
Standard, 37-inch	yard	.19¼@
42-inch		.23½@
RED SEAL		
36-inch		.18 @
40-inch		.19 @
50-inch		.30 @
FLAT FINISH		
Imperial, 36-inch		.15½@
40-inch		.17½@

GOLD SEAL

40-inch		$0.29 @

Osnaburgs

40-inch 2.35-yard	yard	.17⅝@
40-inch 2.48-yard		.16¾@
40-inch 3.00-yard		.13⅞@
37-inch 2.42-yard		.17⅛@

Raincoat Fabrics

COTTON		
Bombazine 64 x 60	yard	.12½@
Bombazine 60 x 48		.11½@
Plaids 60 x 48		.12¼@
Plaids 56 x 44		.11¾@
Surface prints 60 x 48		.12½@
Surface prints 64 x 60		.13½@

Sheetings, 40-inch

40 x 48, 2.50-yard	yard	.14¼@
48 x 48, 2.85-yard		.12½@
64 x 68, 3.15-yard		.13¾@
56 x 60, 3.60-yard		.12 @
48 x 44 3.75-yard		.10¾@

Sheetings, 36-inch

48 x 48, 5.00-yard	yard	$0.08½@
40 x 40, 6.15-yard		.06¾@

Tire Fabrics

SQUARE WOVEN 17¼-ounce				
Egyptian, karded	pound	.52	@	.53
Peeler, karded		.46	@	.47
CORD 23/5/3				
Egyptian, combed	pound	.62	@	.64
Egyptian, karded		.55	@	.58
Peeler, combed, 1 1/16-in.		.65	@	.68
Peeler karded, 1 1/16-in.		.48	@	.50
CORD 13/3/3				
Peeler karded	pound			
8.25-oz. Peeler, karded (2 ply)		.45	@	.46
LENO BREAKER				
8-oz. Peeler, karded	pound	.46	@	.48
10-oz. Peeler, karded		.46	@	.47
CHAFER				
8.25-oz. Peeler, karded (2 ply)	pound	.44	@	.46
9.5-oz. Peeler, karded (4-ply)		.48	@	.50
12-oz. Peeler, karded		.47	@	.48
14-oz. Peeler, karded		.47	@	.48

The Cotton Outlook

World Production of Cotton

THOSE who are making especial studies of conditions in the cotton industry seem practically to agree in their statements regarding the increasing production of cotton, not only in the United States, but throughout the world. In an article published recently in *The Textile World*, Alston H. Garside, director of the Cotton Information Service, Merchants National Bank, Boston, said in part:

World production of cotton, counting foreign as well as American growths, is larger this season than for several seasons past, if not the largest in the history of the trade. Even allowing for a substantial increase in world consumption, the probabilities are that the world will not use as much as it has grown this season and accordingly a portion of the current crop will be carried over into next season.

The world's commercial growth this season is estimated at about 25,950,000 equivalent 478-pound bales exclusive of American linters, against 23,782,000 last season, 19,050,000 two seasons ago, 18,091,000 three seasons ago and 15,128,000 four seasons ago. It is thus seen that production has increased steadily and at an extraordinary rate during the past four years. The world's crop this season was actually 10,800,000 bales larger than that of four years ago.

Numerous countries have contributed to the increase in foreign production. Egypt has increased its crop about 600,000 bales, India about 750,000, Mexico about 100,000, Russia about 950,000, China about 350,000 as compared with that of 1921-22, and the smaller cotton-growing countries including Uganda, the Anglo-Egyptian Sudan, Turkey, Persia, Korea, Argentina and about twenty-five others have increased about 600,000.

Production has increased greatly both in this country and abroad during these years. The domestic crop this year is about 15,650,000 bales against only 8,215,000 four years ago and the total foreign crop is about 10,300,000 equivalent 478-lb. bales against 6,913,000 four years ago. It is thus seen that production of cotton in this country has increased about 7,400,000 bales and in foreign countries about 3,400,000 in the four years.

American Cotton Production

The supply of lint cotton in the United States for the year ended July 31, 1925, compiled from data of stocks carried over from the preceding year, imports and ginnings, amounted to 15,638,244 bales, and the distribution, made up of exports, consumption, and stocks carried over to the new season, to 15,827,990 bales. As thus compiled, the aggregate distribution exceeds the aggregate supply by 189,746 bales.

The cotton crop of 1924 was the largest ever grown in the United States with the exception of those of 1911, 1913, and 1914. The total reported for the crop of 1924 counting round as half bales and excluding linters was 13,639,399 bales. Expressed in units of 500 pounds gross weight the crop amounted to 13,627,936 bales. Compared with the crop of 1923 there was an increase of 3,488,265 bales. It was, however, 2,506,994 bales short of the record crop of 1914.

The most significant fact brought out by means of statistics is the rapid growth of the industry in the cotton-growing States. In 1880 there were only 561,360 active cotton spindles in these States, and the quantity of cotton consumed was 188,748 bales. In 1925, 17,292,042 spindles were operated, while the quantity of cotton and linters consumed was 4,459,956 bales. For the year ending July 31, 1925, the consumption in the cotton-growing States formed 65.1 per cent of the total for the country; that in the New England States 24.4 per cent; and that in all other States 10.5 per cent. Of the total number of spindles operated during 1925, 49.4 per cent were in the cotton-growing States, 45.6 per cent in the New England States, and 5 per cent in all other States.

Varieties of Cotton Consumed

Of the total consumption of cotton in the United States during the year ended July 31, 1925, 5,894,497 bales were upland, 19,018 American-Egyptian, 3,970 sea-island, and 275,932 foreign. In the cotton-growing States the total consumption was 4,220,010 bales, and in all other States 1,973,407 bales.

Nearly all of the cotton consumed in the United States is domestic upland cotton. The term "upland" is applied to all cotton produced in this country, except sea-island and American-Egyptian cotton, and includes the long-staple upland varieties, which constitute a larger proportion than formerly. The manufacturers in the cotton-growing States use very little sea-island or foreign cotton, having consumed only 28,441 bales of these kinds combined in 1925. More than one-third of the sea-island and American-Egyptian cotton consumed in the United States was reported from Massachusetts. Rhode Island, Connecticut, and California follow in the order of quantity used. Establishments engaged in the manufacture of thread and of automobile tires and those which spin yarns designed for these purposes report the largest consumption of these cottons.

Of the foreign cotton consumed in the United States a large proportion is Egyptian, and much of this is used in the manufacture of automobile tires. The Egyptian grades are said to be freer from trash and short fibers than the American, and for this reason to yield less waste in combing and carding.

Efforts to Reduce Cotton Acreage

During the sessions of a conference held February 4 in Memphis, Tennessee, and attended by several hundred cotton growers, bankers and merchants, plans were discussed in regard to reducing the acreage planted to cotton, in order to improve conditions for the American cotton grower. J. S. Wannamaker, president of the American Cotton Association, presided at this meeting, and said in part:

Every attempt during the last 30 years by the southern cotton farmer to increase food crops and other money crops than cotton has resulted in higher prices for cotton the following fall.

In 1921, with a surplus of 9,000,000 bales of American cotton, spot cotton was practically without a market. An acreage reduction meeting, similar to this, was held here at Memphis and resulted in a drastic reduction of acreage.

The following cotton crop was less than 9,000,000 bales. There were bumper crops of food, feed, and forage supplies. The farmers were blessed with prosperity.

Plans for the present year are to increase feed, food and forage, decrease cotton acreage 25 per cent, to be handled by putting each State campaign in the hands of the Commissioners of Agriculture, Extension Service, bankers' committees and representatives of the American Cotton Association of each State. We should immediately take steps to organize the cotton producing industry of the entire South, so as to stabilize profits along these lines. It is only in this way that permanent prosperity can be brought to the South, and the entire nation benefited. If this is not done, then the cotton producer is doomed to sink to an even lower standard of living.

Forecasting Next Season's Crop

Dr. Lewis H. Haney, director of the New York University Business Research Bureau, believes that cotton interest is now centering in the coming season's crop but that, pending further developments, prices will probably remain stable around 20 cents a pound. To quote in part from his weekly analysis:

It is reasonably certain that the old crop will turn out to have been somewhat over 15.6 million bales—perhaps about 15.8 million bales. The quantity ginned to Jan. 16 was 15,488,000 bales and judging by the past, several hundred thousand bales will yet be added. This is a large crop, but its effect on prices depends upon a number of other considerations. Will the next year's crop be a large one? Will the carry-over be unduly large? Will the dry goods trade broaden out so as to insure a market for the crop?

As regards next year's crop, it is anybody's guess. Our guess is that it is not probable that the new crop will be as large as the old. Efforts to curtail cotton acreage have been notably ineffective in the past. About all that can be said is that the price of cotton is now lower than it has been in several years, while the

price of live stock is such as to make hogs and cattle profitable. Thus the efforts which are being made by bankers and others in the South to bring about curtailment have a little better background than has been the case sometimes. Of somewhat greater importance is the report from the Department of Agriculture that the boll weevil promises to be more active during the next season. Under the circumstances the chances favor a somewhat smaller crop next year.

SPRING MEETING OF N.A.C.M.

The spring meeting of The National Association of Cotton Manufacturers will be held April 16, 1926, at the Copley Plaza Hotel, Boston, Massachusetts. An interesting program is being prepared.

Tire Manufacturers Cut Prices

On February 3 the long-rumored reduction in tire prices was announced by the United States Rubber Co., the Firestone organization following some two hours later. Similar action was also taken by the Goodrich and Goodyear companies, while other important tire maunfacturing concerns are expected to bring their prices into line.

The price cut made by the United States Rubber Co. amounts to 10 per cent on all first line tires and tubes, while reductions range from 3½ to 7½ per cent on what are known as second line tires. The new Firestone prices are from 5 to 12 per cent lower, while the Goodrich reduction on Silvertown tires is 10 per cent below the former figure. Most tire manufacturers have at the same time adopted the 60-day billing plan, by means of which they expect to avoid a sales slump during the next two months when demand is apt to decline. During 1925, and as a result of the high price of crude rubber, tire prices were increased five times. Present indications are that no further price reductions may be expected during the near future.

REPORT OF RIMS INSPECTED AND APPROVED BY THE TIRE AND RIM ASSOCIATION OF AMERICA, INC.

Rim Size	January, 1926 Number	January, 1926 Per Cent	January, 1925 Number	January, 1925 Per Cent
Motorcycle Rims				
24 x 3	5,695	0.3	.....	....
26 x 3	5,966	0.3	10,707	0.6
28 x 3	1,131	0.1	300	0.0
Clincher Rims				
30 x 3	.....	....	11,344	0.7
30 x 3½	373,926	18.9	697,702	38.6
31 x 4	1,522	0.1	79,236	4.7
Balloon Rims				
28 x 3½	792,343	38.9	177,413	9.8
29 x 3½	.....	2.2	38,908	2.1
28 x 4	198,336	9.9	170,599	9.4
29 x 4	186,713	9.4	68,503	3.8
30 x 4	1,729	0.0	54,709	3.0
29 x 4½	55,709	3.0	31,452	1.7
30 x 4½	158,296	7.9	72,730	4.0
31 x 4½	2,880	0.1	32,862	1.8
30 x 5	14,939	0.8	8,626	0.5
31 x 5	25,627	1.3	53,032	2.9
33 x 6	6,196	0.3	1,535	0.1
High Pressure Rims				
30 x 3½ S. S.	16,570	0.8	96,933	5.4
32 x 3½	2,050	0.2	2,673	0.1
31 x 4	126	0.0	1,270	0.1
32 x 4	13,657	0.3	20,405	1.1
33 x 4	.....	....	1,720	0.1
34 x 4	.....	0.0	300	0.0
32 x 4½	45,927	2.3	85,479	4.7
34 x 4½	1,690	0.1	6,707	0.4
Truck 20"				
30 x 5	46,804	2.4	48,429	2.7
32 x 6	6,864	0.3	13,472	0.7
34 x 7	921	0.0	1,390	0.1
36 x 8	.....	....	953	0.0
Truck 24"				
34 x 5	5,567	0.3	9,493	0.5
36 x 6	7,968	0.3	7,092	0.4
38 x 7	212	0.0	.....	....
40 x 8	1,117	0.0	991	0.0
Totals	1,980,481	100.0	1,807,055	100.0

	Per Cent		Per Cent
Motorcycle	0.7	Motorcycle	0.6
Clincher	19.0	Clincher	44.0
Balloon	72.8	Balloon	39.1
High Pressure	4.0	High Pressure	11.9
Truck—20"	2.7	Truck—20"	3.5
Truck—24"	0.8	Truck—24"	0.9

Metal Market Review

New York

Prices during February have been fairly steady, but activity is more pronounced in some metal markets than others. Copper prices during the middle of the month represented a decided advance, there being a considerable demand for this metal. A reduction became evident however in the prices for lead, while weakness in zinc also developed. In contrast to this, the steel output in February promises to exceed that of January, when the daily ingot production, at 4,153,545 gross tons, was, according to *The Iron Age*, exceeded only twice, in March, 1924, and March, 1925.

ALUMINUM. Virgin metal, 98 to 99 per cent pure, is obtainable in ingot form at 27 to 28 cents per pound, delivered.

ANTIMONY. There has been moderate activity in the market for Chinese metal, with prompt metal available at 21.37½ cents, New York, duty paid.

COPPER. During the early part of February export business greatly improved, while during the second week of the month prices rose ⅛ cent a pound, the week closing at 14⅜ cents. Part of the advance in price was said to be due to the news that the Copper Export Association was being revived.

LEAD. *The Journal of Commerce* states that the lead market is none too strong, and that although this metal is not as scarce as it was a month or two ago, there is by no means an oversupply. Shipments are going forward steadily on old contracts.

STEEL. During January the steel ingot plants of the United States were producing at the rate of 89 per cent of capacity, according to statistics prepared by the American Iron and Steel Institute. Consumption is undoubtedly proceeding at a high rate, but the February and March figures will be necessary in order to know the year's trend.

TIN. The world's visible supply of this metal is said to have declined from 1,000 to 2,000 tons, and prompt tin is in a tight position. A feature of the market is the continued scarcity of spot Straits, which still commands a considerable premium over futures.

ZINC. Prices for this metal continue to fall, and there is little business, buyers apparently waiting until the decline has spent itself. It is believed that there will soon be a turn in the market for the better.

Basic Metals

February 19, 1926

	Cents per pound
Aluminum, virgin, 98@99 per cent	27.00 @
Antimony	22.25 @22.50
Copper—Lake, spot	14.125 @14.50
Electrolytic, spot	14.125 @14.375
Castings, refinery	13.75 @
Lead, spot, New York	9.10 @ 9.15
Lead, spot, East St. Louis	8.875 @ 9.00
Nickel, ingot, pound	35.00 @
Tin, spot	64.125 @
Zinc, spot, New York	7.90 @ 7.95
Zinc, spot, East St. Louis	7.55 @ 7.60

Steel Wire

BASE PRICE* ON NO. 9 GAGE AND COARSER

	Cents per pound
Bright basic	4.25 @
Annealed soft	4.50 @
Galvanized annealed	5.15 @
Coppered basic	5.15 @
Tinned soft Bessemer	6.15 @

*Regular extras for lighter gage.

Copper Wire

BASE PRICE F. O. B. FACTORY

	Cents per pound
Bare copper wire	16.50 @
No. 6 B. & S. gage	16.50 @
No. 8 B. & S. gage	16.50 @
No. 14 B. & S.	17.50 @

Exports of India Rubber Manufactures from the

EXPORTED TO	Belting	Hose	Packing	Thread	Boots		Shoes		Canvas Shoes with Rubber Soles		Soles and Heels	Waterproofed Auto Cloth and Rubberized Fabrics	Waterproofed Outer Garments
EUROPE	Value	Value	Value	Value	Pairs	Value	Pairs	Value	Pairs	Value	Value	Value	Value
Austria	$4,687	$1,644	$77	.....	17,031	$33,166	53,181	$83,433	32,022	$52,873	.....	$2,279	.....
Azores and Madeira Islands	131	10	.....	.....	24	102	.....	.....	222	284	$278	.....	$22
Belgium	54,214	36,032	13,669	$88,952	5,910	15,117	7,380	5,085	4,924	5,581	632	25,464	44
Bulgaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Czechoslovakia	196	1,007	.....	.....	.....	.....	24	14	.....	.....	754	2,686	.....
Denmark	18,001	7,924	8,955	286	70,000	167,080	82,816	65,266	122,955	92,582	24,157	2,499	820
Esthonia	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finland	30,664	1,092	363	.....	2,667	8,730	.....	.....	2,208	1,274	20,377	3,111	.....
France	58,505	14,763	22,114	528,293	2,456	8,659	5,526	4,777	5,097	4,044	398	34,457	3,110
Germany	4,128	4,160	3,824	62,511	27,459	73,507	93,213	97,473	41,091	40,000	3,725	33,834	672
Gibraltar	884	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greece	45	3,444	.....	.....	297	934	.....	.....	.....	.....	.....	4,788	1,413
Hungary	.....	.....	.....	.....	.....	.....	31	33	.....	.....	.....	.....	.....
Iceland & Faroe Islands	224	.....	.....	.....	23,781	59,871	25,572	66,049	4,152	3,262	.....	81	10
Italy	3,880	5,373	616	161,683	5,828	20,138	33,364	27,938	7,790	7,252	672	13,004	46
Latvia	8,076	.....	.....	.....	.....	.....	.....	.....	.....	.....	351	154	.....
Lithuania	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malta, Gozo and Cyprus Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	406	100
Netherlands	9,055	38,630	8,673	1,171	7,750	23,075	3,840	2,814	5,580	7,051	13,821	7,497	.....
Norway	21,406	15,358	3,480	9,157	15,141	42,261	111,079	76,419	48,840	32,762	23,498	14,230	.....
Poland and Danzig	309	881	.....	116	.....	.....	3,532	1,622	.....	.....	81	.....	.....
Portugal	382	1,013	.....	.....	1,535	6,143	4,386	3,868	778	492	298	1,902	274
Rumania	.....	1,434	289	.....	828	1,656	4,411	3,205	459	486	.....	150	.....
Russia in Europe	22,230	6,550	76	5,838	.....	.....	.....	.....	.....	.....	.....	.....	60
Spain	14,217	2,311	1,197	79,312	2,654	8,246	20,432	12,435	1,248	824	2,794	1,204	76
Sweden	73,936	21,866	5,353	7,531	37,897	114,016	9,119	7,064	11,724	4,946	53,658	14,082	95
Switzerland	4,133	4,368	1,221	734	2,439	4,959	35,820	33,711	3,404	5,469	419	8,472	.....
Turkey in Europe	.....	789	13	.....	638	1,903	1,381	1,196	5,768	3,297	.....	158	.....
United Kingdom	263,820	364,903	64,700	624,308	516,945	1,045,573	220,457	158,815	312,212	243,708	62,711	270,897	16,614
Irish Free State	.....	257	.....	.....	.....	.....	889	1,373	.....	.....	.....	132	81
Yugoslavia, Albania, etc	.....	458	.....	.....	14	64	.....	.....	.....	.....	.....	23	27
TOTALS, EUROPE	$593,118	$534,267	$134,620	$1,569,892	741,294	$1,635,197	736,453	$652,590	616,474	$506,127	$208,054	$441,510	$23,464
NORTH AMERICA													
Canada	$212,330	$153,528	$123,392	$110,368	26,668	$71,767	42,572	$50,734	34,242	$19,928	$21,095	$317,738	$28,050
British Honduras	411	430	128	.....	9	7	12	12	1,654	2,154	107	106	628
Costa Rica	1,841	8,251	1,397	.....	12	45	551	417	2,639	2,303	16,831	1,855	9,908
Guatemala	6,651	8,011	2,551	.....	42	50	710	760	34,866	24,426	21,674	2,164	7,298
Honduras	4,022	9,119	2,621	108	36	106	1,636	1,150	9,432	9,141	14,484	334	8,398
Nicaragua	6,922	5,854	5,421	.....	50	105	1,001	1,108	18,341	15,264	16,606	458	589
Panama	3,392	29,420	12,082	.....	418	1,222	5,791	6,267	49,633	35,696	11,773	3,261	6,816
Salvador	4,783	6,610	2,042	322	.....	.....	2,230	1,315	25,270	15,181	55,906	496	1,651
Greenland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexico	299,155	247,154	82,044	11,054	1,979	6,814	12,863	12,133	474,312	385,015	221,746	75,234	124,389
Miquelon & St. Pierre Islands	.....	.....	15	.....	7,321	19,659	1,527	519	.....	.....	42	.....	5,039
Newfoundland and Labrador	8,889	14,632	1,182	.....	51,554	142,173	43,664	52,031	28,388	20,051	11,872	854	61,044
Bermuda	59	492	401	.....	248	747	602	593	6,370	6,382	1,096	749	542
Barbados	215	143	90	.....	.....	.....	36	36	2,438	1,875	147	1,220	.....
Jamaica	815	2,800	1,524	.....	.....	.....	1,434	2,339	45,030	35,855	3,474	8,206	1,393
Trinidad and Tobago	851	2,807	6,635	.....	200	278	2,160	1,610	33,750	15,632	2,696	3,840	128
Other British West Indies	841	3,076	1,214	.....	.....	.....	573	492	19,272	16,270	654	633	386
Cuba	66,137	160,212	89,137	152	1,914	4,977	38,751	22,573	764,838	443,320	82,106	56,814	146,783
Dominican Republic	5,311	14,315	9,373	.....	.....	.....	636	497	178,563	118,873	7,155	3,233	19,315
Dutch West Indies	25	21,731	3,846	.....	4	22	1,691	1,424	177,544	118,488	3,190	79	2,785
French West Indies	106	20	.....	.....	13	37	.....	.....	193	143	.....	551	.....
Haiti	1,673	3,931	1,315	.....	.....	.....	746	328	37,636	29,776	5,489	1,312	519
Virgin Islands of U. S.	74	26	137	.....	.....	.....	24	18	5,612	5,311	1,390	.....	188
TOTALS, NORTH AMERICA	$624,503	$692,562	$346,547	$122,004	90,468	$247,939	159,210	$156,351	1,950,023	$1,321,084	$479,533	$479,137	$425,849
SOUTH AMERICA													
Argentina	$111,103	$95,109	$25,886	$466	12,404	$24,036	6,982	$10,030	947,699	$542,952	$77,274	$176,242	$9,831
Bolivia	25,665	8,088	373	39	578	3,603	.....	.....	1,172	794	2,333	143	2,439
Brazil	169,895	43,082	17,079	5,929	264	868	26,444	18,346	10,662	7,982	5,604	30,757	17,307
Chile	185,523	83,753	20,789	.....	2,493	10,819	12,613	12,563	17,085	12,617	5,313	21,615	6,820
Colombia	19,298	26,372	10,157	830	104	204	9,997	7,859	155,439	104,411	97,976	20,237	11,991
Ecuador	419	11,222	2,858	.....	38	145	2,325	1,572	16,422	12,823	8,018	944	1,793
British Guiana	9,096	3,333	1,842	.....	.....	.....	.....	.....	1,857	1,301	412	535	366
Dutch Guiana	4,292	2,739	38	.....	.....	.....	324	218	4,308	2,102	316	127	85
French Guiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Paraguay	668	1,099	71	.....	.....	.....	.....	.....	1,108	552	.....	600	38
Peru	31,455	36,111	15,204	.....	1,179	6,082	393	749	7,328	6,409	4,896	4,421	19,808
Uruguay	9,115	4,299	2,577	.....	204	729	15,970	13,672	51,062	34,403	24,442	19,449	18,689
Venezuela	10,554	32,879	21,038	375	2	8	389	398	2,684	1,910	35,005	4,652	6,384
TOTALS, SOUTH AMERICA	$577,083	$348,086	$117,912	$7,639	17,266	$46,494	75,437	$65,407	1,216,826	$728,256	$261,589	$279,722	$95,551
ASIA													
Aden	$24	$39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British India	66,218	27,224	$10,720	.....	6,335	$11,053	8,577	$7,146	75,136	$72,808	$836	$7,721	$1,983
Ceylon	1,736	2,300	.....	.....	.....	.....	576	403	1,392	1,014	72	9,390	.....
Straits Settlements	2,089	6,992	1,070	.....	.....	.....	84	85	34,659	24,958	558	11,039	312
Other British East Indies	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
China	30,139	11,371	11,834	$320	990	1,568	65,713	55,599	51,735	41,716	1,539	43,363	317
Chosen	4,767	272	1,388	.....	14	52	432	387	12	15	.....	38	.....
Java and Madura	45,575	17,436	13,004	.....	120	240	749	877	30,678	38,612	1,341	41,757	406
Other Dutch East Indies	4,705	10,271	2,227	.....	.....	.....	.....	.....	847	739	.....	2,451	20
French Indo-China	.....	.....	221	.....	.....	.....	.....	.....	3,045	2,803	.....	329	.....
Hejaz, Arabia, etc	.....	22	.....	.....	.....	.....	244	263	.....	.....	.....	.....	.....
Hongkong	604	1,762	1,751	.....	121	343	10,745	9,118	13,157	12,458	177	2,486	.....
Japan	38,081	89,272	104,376	114,639	6,119	17,523	8,656	7,764	48	97	685	14,087	379
Kwangtung leased Territory	448	212	2,372	800	1,008	2,500	2,998	1,998	.....	.....	.....	5,020	.....
Palestine and Syria	2,193	850	40	.....	.....	.....	38	31	135	125	216	1,484	160
Persia	62	327	1,375	.....	36	133	90	84	.....	.....	.....	.....	.....
Philippine Islands	72,173	57,756	26,045	.....	3,474	6,687	5,538	4,149	546,735	449,294	65,028	21,520	106,540
Russia in Asia	.....	.....	.....	.....	24	216	576	1,118	48	39	.....	.....	268
Siam	1,822	514	1,800	.....	.....	.....	.....	.....	7,259	4,877	.....	.....	1,700
Turkey in Asia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other Asia	.....	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, ASIA	$270,636	$226,693	$178,223	$115,759	18,241	$40,315	105,016	$88,822	764,886	$649,555	$70,452	$160,685	$112,085

United States by Countries During Calendar Year, 1925

Pneumatic Casings: Automobile Number	Pneumatic Casings: Automobile Value	Pneumatic Casings: Others Value	Pneumatic Tubes: Automobile Value	Pneumatic Tubes: Others Value	Solid Tires: Automobile and Motor Truck Number	Solid Tires: Automobile and Motor Truck Value	Solid Tires: Others Value	Tire Rubber Accessories, Repair Materials Value	Hard Rubber Goods: Electrical Supplies Value	Hard Rubber Goods: Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value	Other Rubber Manufactures Value
1,771	$29,816	$698	$4,232	$134	298	$13,911	.....	$2,578	.....	$3,969	$458	$164	.....	$7,289	$1,868
257	3,400	.....	223	.....	.....	.....	.....	90	.....	.....	.....	.....	.....	.....	175
22,860	451,893	516	61,061	36	28	2,214	.....	13,638	.....	1,091	3,163	10,779	$8,504	11,154	20,193
238	4,084	.....	1,156	.....	.....	.....	$464	98	.....	.....	.....	.....	.....	.....	51
6,534	135,624	3,615	19,448	1,297	1,137	46,991	120	3,676	.....	88	105	469	18	43	1,324
86,305	864,555	5,036	131,146	980	1,130	31,688	.....	27,992	$611	3,478	1,311	14,892	37,799	11,803	12,209
56	4,071	.....	608	.....	.....	.....	.....	300	.....	.....	.....	.....	.....	.....	160
9,113	152,748	239	21,885	67	.....	.....	.....	6,636	.....	.....	.....	626	52	2,566	5,147
27,490	464,690	2,059	62,582	435	97	2,849	.....	23,016	14,303	91,621	12,984	26,151	32,949	3,507	67,262
11,356	304,691	1,812	43,238	523	21	806	.....	23,816	195	15	2,879	10,812	5,717	97,489	40,121
.....	.....	.....	.....	.....	.....	.....	.....	160	.....	.....	.....	.....	.....	62	1,028
11,556	178,320	.....	42,762	.....	1,720	63,614	.....	15,860	375	608	.....	.....	.....	356	2,918
391	6,855	.....	1,585	.....	2	56	.....	48	.....	.....	46	5	11	1,988	17
1,177	16,184	.....	2,604	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
5,746	68,391	2,911	19,553	424	232	5,848	.....	16,041	4	25	5,263	10,011	3,862	7,935	19,884
1,465	24,860	.....	4,174	37	20	346	.....	202	.....	.....	.....	.....	.....	1,028	58
160	2,679	.....	481	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
500	4,936	.....	189	.....	.....	.....	.....	488	60	90	.....	.....	.....	565	194
30,433	487,266	12,677	51,329	2,343	219	5,825	251	17,799	2,296	3,444	1,431	13,177	6,707	78,611	43,065
22,176	351,353	3,258	35,895	1,015	809	41,621	.....	9,631	1,169	17	251	3,560	2,842	5,950	19,502
4,144	62,202	611	13,259	474	64	1,899	.....	2,611	.....	.....	101	609	.....	642	1,150
5,254	71,475	419	18,123	93	106	4,720	.....	2,964	153	51	903	2,001	38	517	14,146
1,721	24,587	644	7,121	.....	18	590	.....	221	.....	.....	.....	.....	.....	115	1,528
3,314	42,681	2,926	11,616	492	625	16,728	399	.....	.....	.....	.....	158	.....	.....	89
26,662	414,118	261	56,839	63	3,009	102,181	375	26,512	2,125	827	3,896	3,970	2,721	4,827	11,654
55,671	960,983	4,725	96,076	1,008	622	41,155	.....	12,932	156	1,278	998	15,525	19,529	7,617	12,899
5,436	150,191	491	20,170	10	28	1,891	.....	725	.....	1,207	489	7,327	3,947	850	9,831
158	2,588	.....	1,058	.....	1	31	.....	2,555	.....	.....	.....	.....	69	235	2,067
185,022	2,195,481	38,772	208,437	2,937	25,149	566,762	14,309	104,575	62,929	236,991	55,873	367,995	78,315	555,589	552,980
3,204	24,325	.....	3,789	.....	.....	.....	.....	1,531	.....	.....	.....	.....	.....	55	70
1,772	25,273	1,668	10,217	152	140	4,736	.....	3,920	11	.....	.....	.....	.....	150	130
531,962	$7,530,320	$83,338	$950,806	$12,520	35,475	$956,462	$15,918	$366,256	$84,383	$344,800	$90,091	$488,235	$203,080	$800,943	$841,807
20,752	$344,982	$7,552	$52,438	$2,281	1,371	$41,755	$6,383	$184,439	$204,028	$127,000	$11,964	$210,116	$25,184	$109,625	$720,912
196	2,404	324	731	6	2	55	.....	32	85	146	.....	254	.....	369	226
1,377	30,326	279	3,516	31	28	920	1,519	734	.....	66	242	1,748	434	1,147	4,830
2,820	56,295	343	9,159	26	16	482	3,425	1,092	.....	750	214	1,792	523	2,394	2,965
1,192	25,000	153	4,058	35	273	14,436	.....	258	44	1,036	239	1,346	36	1,040	1,898
1,011	14,549	201	2,943	.....	16	534	.....	221	39	413	113	1,448	47	1,625	1,885
14,625	201,346	3,138	31,142	1,589	744	18,190	2,091	3,457	23	841	2,000	9,013	1,222	2,635	9,055
3,175	62,880	329	11,807	101	254	9,816	29	1,265	33	28	111	737	85	2,094	2,693
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
88,347	1,058,361	18,399	177,096	3,529	2,310	62,508	12,766	50,527	4,743	18,848	8,176	40,682	1,067	71,742	112,531
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	68	137
2,061	24,175	12	4,098	73	38	1,244	2,848	1,063	102	800	285	1,994	65	782	13,257
4	40	49	.....	3	.....	.....	1,739	38	40	25	58	436	453	156	1,314
562	6,427	16	973	.....	112	2,059	10	425	.....	.....	75	32	204	221	823
1,833	22,779	39	2,365	.....	842	18,661	1,094	1,652	45	341	250	192	161	1,615	7,255
1,559	20,963	43	2,417	.....	101	2,963	63	981	31	37	26	231	154	1,410	4,683
1,691	22,882	773	5,121	17	27	557	846	618	54	88	44	216	113	323	937
86,815	960,906	23,632	210,537	9,022	12,164	345,382	7,611	50,168	3,773	17,137	13,361	52,946	3,141	20,648	78,400
14,838	157,957	1,334	29,538	181	1,048	31,809	2,616	2,325	9	1,392	209	5,575	43	718	6,032
2,937	36,419	126	7,730	.....	15	249	.....	1,142	.....	76	.....	46	21	397	1,670
1,352	18,666	.....	1,894	38	78	2,324	470	.....	.....	.....	.....	.....	.....	.....	.....
3,980	64,059	425	14,037	219	28	1,211	2,049	2,073	139	121	125	740	12	281	3,588
418	4,578	.....	1,427	37	20	626	.....	97	.....	.....	.....	309	.....	5,588	247
251,555	$3,136,034	$57,167	$573,067	$17,188	19,487	$555,781	$45,559	$302,607	$213,188	$169,145	$37,492	$329,853	$32,965	$224,878	$975,355
178,434	$2,021,527	$10,846	$344,946	$423	4,336	$143,051	$15,364	$108,178	$6,244	$4,862	$26,519	$81,863	$15,330	$25,619	$75,725
1,404	25,582	47	3,562	23	85	2,530	.....	373	.....	.....	432	1,334	6	1,769	1,023
91,911	922,534	76	124,323	107	2,632	76,525	673	17,356	2,840	8,272	8,492	15,061	1,995	11,926	25,968
19,504	370,618	808	29,187	790	543	29,813	6,531	7,316	1,769	279	1,061	10,963	897	2,366	24,929
13,230	233,483	1,503	56,593	565	692	33,408	2,874	5,942	6,785	1,651	2,922	14,807	486	10,563	15,478
2,099	37,876	24	6,903	6	14	480	71	745	327	863	1,235	1,591	164	1,804	6,411
106	1,392	.....	317	.....	22	576	185	588	.....	.....	10	99	26	1,182	344
213	2,362	201	773	.....	21	398	.....	79	.....	536	.....	22	6	27	501
43	1,895	.....	119	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
278	3,668	.....	1,131	.....	.....	.....	.....	.....	.....	45	.....	.....	.....	728	557
16,916	301,408	1,041	47,513	656	453	18,398	.....	7,356	902	2,991	842	5,451	113	5,786	7,618
34,003	397,686	489	38,936	210	654	20,490	47	15,876	513	334	3,282	10,566	2,341	6,423	13,761
25,447	362,139	938	73,995	273	106	3,582	840	5,877	245	2,383	6,618	6,045	24	3,660	38,370
383,582	$4,682,170	$15,973	$728,298	$3,053	9,558	$329,251	$26,585	$169,786	$19,625	$22,216	$51,413	$147,802	$21,388	$71,853	$210,685
1,124	$12,222	.....	$1,754	.....	8	$501	.....	$29	.....	.....	.....	.....	.....	.....	$35
34,113	377,728	$1,012	52,078	$27	3,321	86,780	$135,516	5,151	$1,165	$432	$3,784	$8,492	$176	$70,859	61,265
5,980	99,347	.....	8,591	.....	710	16,915	5,774	619	30	.....	.....	201	18	1,289	1,698
23,723	221,832	2,237	10,528	159	1,462	33,036	329	1,564	29	398	834	81	.....	2,646	12,057
8	76	.....	.....	636	.....	.....	.....	.....	.....	.....	244	.....	.....	964	.....
15,929	192,159	17,268	31,824	232	789	14,738	3,475	3,661	1,487	1,119	11,055	8,749	1,751	4,858	18,231
271	2,381	480	692	25	.....	.....	.....	.....	.....	2	40	71	.....	.....	171
28,987	335,187	1,181	27,383	494	3,530	108,697	66,198	10,081	60	100	314	1,372	1,856	988	17,199
2,044	24,562	50	3,256	.....	64	1,898	1,392	279	.....	.....	.....	.....	17	494	2,091
20	441	.....	91	.....	.....	.....	.....	62	.....	.....	.....	.....	.....	420	4,817
4,302	59,799	.....	14,464	.....	110	3,247	.....	2,771	.....	.....	.....	.....	.....	1,800	1,239
1,155	15,573	.....	2,341	12	.....	.....	707	691	30	.....	521	2,766	293	2,159	705
81,673	823,846	16,007	119,830	2,678	8,499	143,026	321	13,918	8,541	17,789	2,378	28,399	10,961	586	30,504
49	403	.....	199	.....	.....	.....	.....	14	12	.....	.....	1,121	280	.....	.....
6,235	109,344	725	17,828	181	2	28	.....	17,257	.....	.....	27	2,383	997	2,982	8,703
60	857	.....	507	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28
71,921	750,581	4,548	125,444	2,362	4,980	130,192	112,829	19,551	322	2,654	5,986	15,105	540	8,207	22,225
.....	.....	.....	.....	.....	.....	.....	.....	18	.....	.....	10	.....	.....	.....	.....
164	1,848	.....	339	.....	.....	.....	.....	237	.....	.....	.....	152	.....	1,898	1,587
8	176	.....	27	.....	.....	.....	.....	1,310	.....	.....	.....	.....	28	443	134
8	216	.....	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
277,774	$3,028,572	$43,508	$417,246	$6,806	23,475	$539,058	$326,541	$77,313	$11,676	$22,494	$25,193	$68,892	$16,917	$100,593	$182,689

Exports of India Rubber Manufactures from the

	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth and Rubberized Fabrics Value	Waterproofed Outer Garments Value
OCEANIA													
Australia	$111,936	$105,985	$52,522	.....	13,241	$33,515	18,245	$13,219	34,712	$36,162	$3,966	$137,146	$2,256
British Oceania	.....	41	.....	.....	.....	.....	.....	.....	5,179	4,862	.....	.....	.....
French Oceania	151	329	326	.....	.....	.....	24	24	10,377	8,763	349	73	423
New Zealand	10,525	22,169	10,865	$75	16,749	55,837	583	499	1,295	1,638	2,421	18,478	1,320
Other Oceania	24	101	59	.....	.....	.....	.....	.....	4,151	4,584	63	176	30
TOTALS, OCEANIA	$122,636	$128,625	$63,772	$75	29,990	$89,352	18,852	$13,742	55,714	$56,009	$6,799	$155,873	$4,023
AFRICA													
Abyssinia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belgian Kongo	$4,481	.....	.....	.....	.....	.....	.....	.....	9	$10	.....	.....	$15
British West Africa	93	$458	$44	.....	73	$366	221	$198	6,260	1,678	.....	$186	1,915
British South Africa	136,129	156,413	33,217	$296	10,058	31,163	10,955	9,103	35,372	26,767	$29,790	13,272	39,245
British East Africa	18,452	1,176	29	.....	.....	.....	.....	.....	552	726	74	1,212	.....
Canary Islands	.....	23	.....	.....	.....	.....	.....	.....	.....	.....	1,612	502	.....
Egypt	2,171	393	.....	.....	.....	.....	.....	.....	74	72	1,177	3,050	.....
Algeria and Tunis	14,810	7,246	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other French Africa	.....	.....	.....	.....	.....	.....	.....	.....	100	18	.....	116	45
Italian Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liberia	122	.....	.....	.....	24	112	.....	.....	100	18	.....	22	90
Madagascar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	167	.....
Morocco	9,632	973	146	.....	.....	.....	.....	.....	96	199	.....	209	.....
Portuguese East Africa	56,450	858	5,931	.....	12	34	24	14	980	669	.....	141	627
Other Portuguese Africa	345	178	265	.....	.....	.....	.....	.....	198	279	.....	36	.....
Spanish Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,315	.....
TOTALS, AFRICA	$236,685	$167,718	$39,632	$296	10,167	$31,675	11,200	$9,315	43,741	$30,436	$32,653	$20,228	$41,937
GRAND TOTALS	$2,424,661	$2,097,951	$880,706	$1,815,665	907,426	2,990,972	1,106,168	$986,227	4,641,664	$3,291,467	$1,059,080	$1,537,155	$702,909

Official India Rubber Statistics for the United States

Imports of Crude and Manufactured Rubber

	December, 1925 Pounds	December, 1925 Value	Twelve Months Ended December, 1925 Pounds	Twelve Months Ended December, 1925 Value
UNMANUFACTURED—*Free*				
Crude rubber	90,336,039	$65,055,868	888,478,385	$429,705,014
Balata	178,680	88,227	1,158,858	574,750
Jelutong or Pontianak	839,400	96,532	15,118,547	1,642,531
Gutta percha	288,025	61,655	3,591,081	629,284
Guayule	1,030,251	276,750	8,469,123	1,803,448
Rubber scrap	5,030,670	201,445	25,458,639	983,406
Totals	97,703,065	$65,780,477	942,274,633	$435,338,433
Chicle *dutiable*	1,629,350	$778,630	12,145,193	$5,986,361
MANUFACTURED—*dutiable*				
Rubber belting	68,502	$49,013	748,580	$559,908
Other rubber manufactures of substitutes for rubber	.....	95,671	.....	1,298,197
Totals	68,502	$144,684	12,893,773	$1,858,105

Exports of Foreign Merchandise

UNMANUFACTURED				
Crude rubber	3,382,489	$2,625,259	33,312,784	$19,847,753
Balata	33,647	17,775	558,655	351,830
Jelutong or Pontianak	.....	.....	.....	.....
Gutta percha and rubber substitutes and scraps	.....	.....	104,838	12,406
Totals	3,416,136	$2,643,034	33,976,277	$20,211,989
Chicle	2,258	$1,148	136,113	$64,363
MANUFACTURED				
Gutta percha and India rubber	18,588	$19,047	233,059	$178,861
Totals	18,588	$19,047	233,059	$178,861

Exports of Domestic Merchandise

MANUFACTURED				
India rubber				
Reclaimed	815,084	$93,261	10,239,876	$1,067,316
Scrap and old	1,811,204	136,862	30,951,479	1,615,863
Footwear				
Boots *pairs*	89,968	214,879	907,426	2,090,972
Shoes *pairs*	68,933	61,098	1,106,168	986,227
Canvas shoes with rubber soles *pairs*	438,682	320,575	4,641,664	3,291,467
Rubber water bottles and fountain syringes *number*	21,503	15,490	300,162	214,474
Other druggists' rubber sundries	106,809	138,519	993,776	1,129,408
Bathing caps *dozen*	3,694	8,059	184,102	320,621
Hard rubber goods				
Electrical hard rubber goods	115,321	$54,480	1,132,198	$358,372
Other hard rubber goods	29,434	48,741	556,900	594,976
Tires				
Pneumatic casings				
For automobiles *number*	132,102	2,078,811	1,628,182	21,055,372
Others *number*	3,394	21,099	52,795	215,783
Pneumatic tubes				
For automobiles *number*	117,578	312,449	1,475,460	2,974,873
Others *number*	3,951	3,793	42,824	42,878
Tires				
Solid tires				
For automobiles and motor trucks *number*	9,739	$342,642	112,592	$3,179,597
Others *number*	211,146	66,209	1,714,813	429,948
Tire accessories	240,165	122,755	2,454,908	1,103,736
Belting	312,351	203,232	4,078,651	2,424,661
Hose	448,787	186,598	5,348,859	2,097,951
Packing	189,471	86,907	1,914,962	880,706
Soles and heels	375,098	137,022	3,391,957	1,059,080
Thread	161,000	195,823	1,517,015	1,815,663
Other rubber manufactures	346,865	173,762	5,053,639	2,393,952
Totals	.....	$5,023,066	.....	$51,343,898
Rubber toys, balls and balloons	69,193	$105,570	1,035,630	$1,289,229

Imports of Crude Rubber Into the United States by Customs Districts

	December, 1924 Pounds	December, 1924 Value	*December, 1925 Pounds	*December, 1925 Value
Vermont	42,658	$8,532	.....	.....
Massachusetts	2,294,637	652,759	2,899,419	$1,950,741
New York	54,181,905	14,681,859	85,268,270	61,441,851
Philadelphia	734,514	158,335	.....	.....
Maryland	705,680	157,628	.....	.....
Los Angeles	766,524	174,051	1,126,414	740,423
San Francisco	38,530	8,884	106,666	74,339
Oregon	44,800	9,739	62,050	46,174
Ohio	3,240	711	.....	.....
Washington	.....	.....	705,220	691,536
Colorado	261,856	69,799	168,000	110,804
	59,074,344	$15,922,297	90,336,039	$65,055,868

* Including Latex Dry Rubber Content.

AMERICAN TIRE EXPORTS, 1923-1925

American exports of automobile casings which totaled in 1923 1,362,741, advanced in 1924 to 1,390,135, and for 1925, 1,769,677. Throughout these three years the United Kingdom has remained the leading customer, while Argentina has occupied second place on the list. Brazil, from ranking as thirteenth and fourteenth in 1923 and 1924, advanced to the third place in 1925, while other important customers include Mexico, Cuba, Denmark, and Japan. Detailed figures for the United Kingdom are: 1923, 329,394 casings; 1924, 175,764; and 1925, 188,226. For Argentina the totals are: 1923, 108,353 casings; 1924, 113,352; and 1925, 178,434.—Department of Commerce.

United States by Countries During Calendar Year *(Continued)*

	Pneumatic Casings			Pneumatic Tubes		Solid Tires			Tire Rubber Accessories, Repair Materials	Hard Rubber Goods		Rubber Water Bottles and Fountain Syringes	Other Drug-gists' Rubber Sundries	Bathing Caps	Rubber Toys, Balls and Balloons	Other Rubber Manufactures
	Automobile					Automobile and Motor Truck				Electrical Supplies						
	Number	Value	Others Value	Automobile Value	Others Value	Number	Value	Others Value	Value	Value	Others Value	Value	Value	Value	Value	Value
	76,861	$1,252,544	$6,191	$145,317	$2,253	15,825	$483,447	$10,999	$120,194	$24,693	$35,313	$2,747	$62,633	$13,380	$42,312	$91,497
	142	1,744	67	280	.....	2	130	.....	270	99	.....	.....	.....	.....	75	168
	234	3,750	32	975	45	58	2,346	83	228	32	.....	.....	.....	.....	18	183
	59,973	813,502	6,681	79,968	237	6,009	234,428	618	35,391	3,991	783	2,145	16,816	20,084	15,380	20,813
	943	16,567	113	2,485	65	162	4,045	209	127	.....	146	.....	.....	.....	80	26
	138,153	$2,088,107	$13,084	$229,025	$2,600	22,056	$724,396	$11,908	$156,210	$28,815	$36,242	$4,892	$79,449	$33,464	$57,865	$112,687
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	40	$1,159	.....	$138	.....	.....	.....	.....	.....	.....	.....	.....	$20	.....	.....	$1,675
	1,721	30,963	$18	2,930	$86	2	$53	$87	$316	.....	.....	.....	48	.....	$317	9,249
	27,518	322,518	1,954	36,853	295	1,134	30,536	236	31,360	$287	$79	$4,952	12,213	$11,716	30,041	31,798
	4,455	72,477	506	11,398	241	34	602	.....	1,802	33	.....	.....	44	12	158	441
	3,677	58,565	30	5,212	.....	357	15,793	.....	434	.....	.....	.....	309	.....	36	758
	4,976	90,273	153	10,308	29	958	26,595	2,793	2,399	365	.....	441	2,543	1,079	2,233	17,830
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
	354	4,537	.....	1,311	.....	20	268	.....	70	.....	.....	.....	.....	.....	.....	1,147
	120	1,754	.....	452	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	156	4,799	.....	1,471	.....	.....	.....	.....	90	.....	.....	.....	.....	.....	12	233
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	206	6,015	.....	999	.....	6	116	.....	312	.....	.....	.....	.....	.....	55	825
	597	8,392	.....	1,340	.....	2	20	320	174	.....	.....	.....	.....	.....	219	5,721
	561	8,393	9	2,010	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194
	775	10,324	43	2,009	60	28	666	.....	607	.....	.....	.....	.....	.....	26	758
	45,156	$590,169	$2,713	$76,431	$711	2,541	$74,649	$3,436	$37,564	$685	$79	$5,393	$15,177	$12,807	$33,097	$70,729
	1,628,182	$21,055,372	$215,783	$2,974,873	$42,878	112,592	$3,179,597	$429,948	1,103,736	$358,372	$594,976	$214,474	$1,129,408	$320,621	$1,289,229	$2,393,952

United Kingdom Rubber Statistics

Imports

UNMANUFACTURED Crude rubber From—	December, 1925 Pounds	December, 1925 Value	Twelve Months Ended December, 1925 Pounds	Twelve Months Ended December, 1925 Value
Straits Settlements	11,668,600	£2,404,149	78,377,800	£11,497,415
Federated Malay States	5,908,900	1,214,455	32,070,600	4,900,908
British India	1,414,200	296,885	10,459,800	1,352,638
Ceylon and Dependencies	3,983,000	816,047	28,772,900	4,246,587
Other Dutch possessions in Indian Seas	1,492,400	299,714	9,448,300	1,295,730
Dutch East Indies (except other Dutch possessions in Indian Seas)	2,576,000	533,675	19,538,600	2,810,547
Other countries in East Indies and Pacific, not elsewhere specified	292,500	60,817	2,108,500	313,949
Brazil	570,800	104,386	8,675,800	883,090
Peru	4,500	340	43,000	4,036
South and Central America (except Brazil and Peru)	44,600	6,826	318,600	44,639
West Africa				
French West Africa	166,900	25,519	1,493,100	103,081
Gold Coast	295,600	19,212	721,400	66,625
Other parts of West Africa	525,800	72,881	1,851,700	219,510
East Africa, including Madagascar	249,100	41,926	1,066,200	154,826
Other countries	447,200	91,846	1,831,200	290,901
Totals	29,640,100	£5,988,678	197,377,500	£28,184,482
Waste and reclaimed rubber	956,000	£18,680	7,548,400	£111,690
Gutta percha and balata	1,093,400	162,186	10,579,100	1,441,563
Rubber substitutes	.....	.....	145,700	5,970
Totals	2,049,400	£180,866	18,273,200	£1,559,223
MANUFACTURED				
Boots and shoes....*doz. pairs*	30,663	£78,072	327,564	£838,379
Tires and tubes				
Pneumatic				
Outer covers	.....	286,612	.....	3,017,426
Inner tubes	.....	51,066	.....	456,081
Solid tires	.....	36,695	.....	393,137
Other rubber manufactures	.....	73,710	.....	1,622,592
Totals	.....	£526,155	.....	£6,327,615

Exports

UNMANUFACTURED RUBBER				
Waste and reclaimed	3,078,000	£33,442	21,938,900	£258,516
Rubber substitutes	77,600	2,181	1,263,100	29,466
Totals	3,155,600	£35,623	23,202,000	£287,982
MANUFACTURED				
Boots and shoes....*doz. pairs*	16,790	£30,980	281,708	£450,028
Tires and tubes				
Pneumatic				
Outer covers	.....	244,427	.....	3,015,345
Inner tubes	.....	54,341	.....	648,460
Solid tires	.....	34,681	.....	415,124
Other rubber manufactures	.....	246,054	.....	3,083,725
Totals	.....	£610,483	.....	£7,612,682

Exports—Colonial and Foreign

UNMANUFACTURED Crude rubber To—	December, 1925 Pounds	December, 1925 Value	Twelve Months Ended December, 1925 Pounds	Twelve Months Ended December, 1925 Value
Russia	3,437,000	£626,396	15,875,000	£1,762,165
Sweden, Norway and Denmark	210,600	38,842	2,270,200	276,051
Germany	777,200	139,683	19,526,300	2,104,721
Belgium	140,500	26,349	4,621,000	513,081
France	2,068,900	409,901	36,886,900	4,667,105
Spain	71,600	10,135	788,700	93,162
Italy	690,300	147,772	10,959,300	1,384,897
Austria	.....	.....	121,900	11,220
Hungary	3,900	806	28,600	4,342
Other European countries	190,900	29,982	2,060,600	213,308
United States	8,253,200	1,592,812	89,673,100	10,735,221
Canada	.....	.....	4,502,700	434,252
Other countries	3,100	787	966,700	107,868
Totals	15,847,200	£3,023,465	188,281,000	£22,307,393
Waste and reclaimed rubber	52,100	£2,194	328,400	£9,147
Gutta percha and balata	108,100	17,382	948,200	99,606
Rubber substitutes	2,900	135	97,900	4,649
Totals	163,100	£19,711	1,374,500	£113,402
MANUFACTURED				
Boots and shoes....*doz. pairs*	971	£3,611	6,056	£17,068
Tires and tubes				
Pneumatic				
Outer covers	.....	26,710	.....	444,413
Inner tubes	.....	3,757	.....	67,557
Solid tires	.....	990	.....	37,312
Other rubber manufactures	.....	6,299	.....	158,369
Totals	.....	£41,367	.....	£724,719

Landings, Deliveries and Stocks in London and Liverpool as Returned by the Warehouses and Wharves During the Month of December, 1925

	Landed for December Tons	Delivered for December Tons	Stocks, December 31 1925 Tons	1924 Tons	1923 Tons
LONDON:					
Plantation	6,373	4,537	5,583	29,346	59,898
Other grades	19	16	36	93	83
LIVERPOOL:					
Plantation	†299	†362	†403	†2,722	†5,909
Pará and Peruvian	145	196	216	141	463
Other grades	....	6	12	74	210
Total tons London and Liverpool	6,836	5,117	6,250	32,376	66,563

†Official returns from the six recognized public warehouses.

Crude Rubber Arrivals at New York as Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
JANUARY 17. By "Bernini," Brazil.					
General Rubber Co.	559	12	190	144	...
L. Littlejohn & Co., Inc.	1,322	5	269	246	...
Meyer & Brown, Inc.	...	...	119	387	...
JANUARY 27. By "Francis," Brazil.					
H. A. Astlett & Co., Inc.	68	8	2	...	...
General Rubber Co.	66	7	102	1	...
L. Littlejohn & Co., Inc.	265	...	...	...	...

Plantations

	Cases
JANUARY 16. By "Pres. Monroe," Far East.	
H. A. Astlett & Co., Inc.	350
Baird Rubber & Trading Co., Inc.	2,371
General Rubber Co.	2,475
Haldane Bierrie & Co., Inc.	250
Hood Rubber Co.	*805
Littlejohn & Co., Inc.	4,691
Meyer & Brown, Inc.	990
H. Muehlstein & Co., Inc.	959
Poel & Kelly, Inc.	100
Raw Products Co.	96
Chas. T. Wilson Co., Inc.	660
JANUARY 17. By "Missouri," London.	
General Rubber Co.	54
JANUARY 18. By "Ascania," London.	
General Rubber Co.	116
Littlejohn & Co., Inc.	280
JANUARY 19. By "Gothic Prince," Far East.	
H. A. Astlett & Co., Inc.	*160
H. A. Astlett & Co., Inc.	454
Baird Rubber & Trading Co., Inc.	834
General Rubber Co.	4,571
Hood Rubber Co.	*403
L. Littlejohn & Co., Inc.	2,358
Meyer & Brown, Inc.	1,386
H. Muehlstein & Co., Inc.	1,272
Poel & Kelly, Inc.	1,249
Poel & Kelly, Inc.	*88
Raw Products Co.	60
Chas. T. Wilson Co., Inc.	240
JANUARY 19. By "Andania," London.	
Baird Rubber & Trading Co., Inc.	124
JANUARY 19. By "American Merchant," London.	
General Rubber Co.	92
Littlejohn & Co., Inc.	235
Poel & Kelly, Inc.	1,669
JANUARY 19. By "Clan MacIntosh," Far East.	
General Rubber Co.	1,604
Littlejohn & Co., Inc.	145
Meyer & Brown, Inc.	560
Poel & Kelly, Inc.	54
JANUARY 19. By "Mexico," Mexico.	
Chas. T. Wilson Co., Inc. Bales	30
JANUARY 21. By "Mahronda," Far East.	
General Rubber Co.	560
Meyer & Brown, Inc.	160
JANUARY 22. "Rotterdam," Rotterdam.	
Littlejohn & Co., Inc.	147
H. Muehlstein & Co., Inc.	93
JANUARY 23. By "Hyson," Far East.	
H. A. Astlett & Co., Inc.	447
Baird Rubber & Trading Co., Inc.	20
General Rubber Co.	5,988
Haldane Bierrie & Co., Inc.	24
Hood Rubber Co.	*96
L. Littlejohn & Co., Inc.	2,595
Meyer & Brown, Inc.	1,029
Meyer & Brown, Inc.	*112
H. Muehlstein & Co., Inc.	349
Poel & Kelly, Inc.	1,232
Poel & Kelly, Inc.	*416
Raw Products Co.	300
Chas. T. Wilson Co., Inc.	117
JANUARY 25. By "Pyrrhus," Far East.	
H. A. Astlett & Co., Inc.	935
Baird Rubber & Trading Co., Inc.	610
General Rubber Co.	9,809
Haldane Bierrie & Co., Inc.	300
L. Littlejohn & Co., Inc.	6,546
Meyer & Brown, Inc.	3,448
Meyer & Brown, Inc.	*115
H. Muehlstein & Co., Inc.	707
Poel & Kelly, Inc.	*520
Poel & Kelly, Inc.	1,709
Raw Products Co.	180
Chas. T. Wilson Co., Inc.	1,176
JANUARY 25. By "City of Oran," Far East.	
General Rubber Co.	70
Littlejohn & Co., Inc.	86
Meyer & Brown, Inc.	14
JANUARY 26. By "Steel Navigator," Far East.	
H. A. Astlett & Co., Inc.	403
Baird Rubber & Trading Co., Inc.	192
General Rubber Co.	4,387
Hood Rubber Co.	*1,155
L. Littlejohn & Co., Inc.	5,132
Meyer & Brown, Inc.	3,065
H. Muehlstein & Co., Inc.	540
Poel & Kelly, Inc.	222
Poel & Kelly, Inc.	*200
Chas. T. Wilson Co., Inc.	528
JANUARY 26. By "Menominee," London.	
General Rubber Co.	738
Littlejohn & Co., Inc.	1,065
Chas. T. Wilson Co., Inc.	138
JANUARY 28. By "Ningchow," Far East.	
H. A. Astlett & Co., Inc.	1,018
Baird Rubber & Trading Co., Inc.	769
General Rubber Co.	6,293
Haldane Bierrie & Co., Inc.	120
Hood Rubber Co.	*96
L. Littlejohn & Co., Inc.	6,180
Meyer & Brown, Inc.	1,554
Meyer & Brown, Inc.	*400
H. Muehlstein & Co., Inc.	354
Poel & Kelly, Inc.	1,300
Poel & Kelly, Inc.	*511
Raw Products Co.	607
Chas. T. Wilson Co., Inc.	1,157
JANUARY 28. By "American Shipper," London.	
H. A. Astlett & Co., Inc.	129
General Rubber Co.	851
Littlejohn & Co., Inc.	187
Poel & Kelly, Inc.	298
Chas. T. Wilson Co., Inc.	126
JANUARY 31. By "Silveray," Far East.	
H. A. Astlett & Co., Inc.	150
H. A. Astlett & Co., Inc.	*62
Baird Rubber & Trading Co., Inc.	210
General Rubber Co.	4,412
Haldane Bierrie & Co., Inc.	42
Hood Rubber Co.	*982
L. Littlejohn & Co., Inc.	2,317
Meyer & Brown, Inc.	1,530
Poel & Kelly, Inc.	1,376
Chas. T. Wilson Co., Inc.	198
FEBRUARY 1. By "Pres. Harrison," Far East.	
H. A. Astlett & Co., Inc.	347
Baird Rubber Co.	2,240
Paul Bertruch & Co.	241
General Rubber Co.	1,960
Hood Rubber Co.	*674
L. Littlejohn & Co.	4,416
Meyer & Brown, Inc.	*650
Meyer & Brown, Inc.	2,679
Muehlstein, H. Co., Inc.	702
Poel & Kelly, Inc.	50
Poel & Kelly, Inc.	275
Chas. T. Wilson Co., Inc.	1,134
FEBRUARY 3. By "Darian," Far East.	
Poel & Kelly, Inc.	*121
FEBRUARY 3. By "Ansonia," London.	
H. A. Astlett & Co., Inc.	492
General Rubber Co., Inc.	70
L. Littlejohn & Co., Inc.	351
Poel & Kelly, Inc.	450
FEBRUARY 4. By "American Farmer," London.	
General Rubber Co.	1,835
L. Littlejohn & Co., Inc.	1,683
Meyer & Brown, Inc.	281
Raw Products Co.	96
Chas. T. Wilson Co., Inc.	50
FEBRUARY 6. By "Westphalia," Hamburg.	
H. A. Astlett & Co., Inc.	152
Haldane Bierrie & Co., Inc.	247
Littlejohn & Co., Inc.	50
FEBRUARY 9. By "Carmania," London.	
Poel & Kelly, Inc.	123
Chas. T. Wilson Co., Inc.	65
FEBRUARY 9. By "Minnetonka," London.	
General Rubber Co.	5,140
L. Littlejohn & Co., Inc.	1,869
Poel & Kelley, Inc.	1,706
Chas. T. Wilson Co., Inc.	365
FEBRUARY 10. By "Burgerdyk," Europe.	
L. Littlejohn & Co., Inc.	1,117
FEBRUARY 12. By "Barbadian," Europe.	
General Rubber Co.	50
L. Littlejohn & Co., Inc.	800
Chas. T. Wilson Co., Inc.	150
FEBRUARY 16. By "Aurania," Europe.	
L. Littlejohn & Co., Inc.	269
FEBRUARY 10. By "American Trader," London.	
General Rubber Co.	380
Chas. T. Wilson Co., Inc.	42
FEBRUARY 10. By "Veendam," Amsterdam.	
General Rubber Co.	50
Haldane Bierrie & Co., Inc.	74
L. Littlejohn & Co., Inc.	1,197
FEBRUARY 11. By "Makalla," Far East.	
H. Muehlstein Co., Inc.	220
FEBRUARY 13. By "Pres. Van Buren," Far East.	
Baird Rubber & Trading Co., Inc.	580
General Rubber Co.	1,713
L. Littlejohn & Co., Inc.	3,291
Meyer & Brown, Inc.	857
Meyer & Brown, Inc.	*300
Chas. T. Wilson Co., Inc.	290
FEBRUARY 14. By "Lucerie," Far East.	
General Rubber Co.	4,224
L. Littlejohn & Co., Inc.	902
Meyer & Brown, Inc.	533
Chas. T. Wilson Co., Inc.	290
FEBRUARY 15. By "Antonia," London.	
General Rubber Co.	851
FEBRUARY 16. By "Dacre Castle," Far East.	
Baird Rubber & Trading Co., Inc.	399
L. Littlejohn & Co., Inc.	3,204

*Arrived at Boston.
†Penang Scrap.
‡Pelles.
§Arrived at Laredo, Texas.

Africans

	Cases
JANUARY 15. By "Deutschland," Holland.	
Meyer & Brown, Inc.	36
JANUARY 17. By "La Bourdonnaise," Europe.	
L. Littlejohn & Co., Inc.	395
H. Muehlstein & Co., Inc.	962
JANUARY 17. By "Shodack," Europe.	
L. Littlejohn & Co., Inc.	498
Meyer & Brown	636
Poel & Kelly, Inc.	1,147
JANUARY 19. By "Gothic Prince," Far East.	
Baird Rubber & Trading Co., Inc.	*†170
JANUARY 20. By "Cabo Tortosa," Marseilles.	
Poel & Kelly, Inc.	6
JANUARY 25. By "Samaria," Europe.	
L. Littlejohn & Co., Inc.	1,842
JANUARY 28. By "Chifuku Maru," Europe.	
L. Littlejohn & Co., Inc.	153
FEBRUARY 1. By "Independence Hall," Bordeaux.	
L. Littlejohn & Co., Inc.	395
H. Muehlstein & Co., Inc.	393
Poel & Kelly, Inc.	241
FEBRUARY 2. By "Fordson," Europe.	
L. Littlejhon & Co., Inc.	241
FEBRUARY 3. By "Alaunia," Europe.	
L. Littlejohn & Co., Inc.	441
FEBRUARY 5. By "Albert Ballin," Europe.	
L. Littlejohn & Co., Inc.	477
FEBRUARY 5. By "Westphalia," Europe.	
L. Littlejohn & Co., Inc.	101
FEBRUARY 9. By "Carmania," Europe.	
L. Littlejohn & Co., Inc.	29
FEBRUARY 15. By "Bernini," Brazil.	
General Rubber Co.	11
FEBRUARY 18. By "Medan," Far East.	
Baird Rubber & Trading Co., Inc.	*†156
Baird Rubber & Trading Co., Inc.	†78
FEBRUARY 27. By "Francis," Brazil.	
General Rubber Co.	6

Balata

	Bales
JANUARY 7. By "Stephen," Para and Manaos.	
Paul Bertuch & Co.	42
JANUARY 16. By "Polycarp," Para and Manaos.	
Paul Bertuch & Co.	45

Guayule

	Cases
JANUARY 16. By "Alamo," Mexico.	
Continental Rubber Co. of New York	§336
JANUARY 20. By "El Coston," Mexico.	
Continental Rubber Co. of New York	§1,407
JANUARY 23. By "Medina," Mexico.	
Continental Rubber Co. of New York	§960
JANUARY 27. By "San Iacinto,' Mexico.	
Continental Rubber Co. of New York	§400
FEBRUARY 3. By "El Cid," Mexico.	
Continental Rubber Co. of New York	§1,200
FEBRUARY 5. By "El Occidente," Mexico.	
Continental Rubber Co. of New York	§400
FEBRUARY 9. By "El Oceana," Mexico.	
Continental Rubber Co. of New York	§400
FEBRUARY 9. By "H. R. Mallory," Mexico.	
Continental Rubber Co. of New York	§1,200

Manicobas

	Bales
JANUARY 18. By "Corsican Prince," Brazil.	
Adolph Hirsh & Co., Inc.	40
J. H. Rossbach & Bros., Inc.	12
JANUARY 20. By "Balzac," Brazil.	
J. H. Rossbach & Bros., Inc.	58

Rubber Latex

	Gallons
JANUARY 15. By "Bowes Castle," Far East.	
General Rubber Co.	125,583
JANUARY 26. By "Steel Navigator," Far East.	
General Rubber Co.	29,446
FEBRUARY 1. By "Silveray," Far East.	
General Rubber Co.	66,076

Rubber Statistics for the Dominion of Canada

Imports of Crude and Manufactured Rubber

	November, 1925		Eight Months Ended November, 1925	
UNMANUFACTURED	Pounds	Value	Pounds	Value
Rubber, gutta percha, etc.,				
From United Kingdom...	245,312	$154,206	2,142,938	$1,090,013
United States	2,844,241	2,260,918	21,472,969	13,843,538
Straits Settlements	345,124	257,408	3,573,812	1,862,545
Dutch East Indies	344,323	275,460	729,824	474,600
France	704	490	704	490
Other countries	56,100	35,207	123,300	62,184
Totals	3,835,804	$2,983,689	28,043,547	$17,333,370
Rubber, recovered	761,500	$158,046	5,043,295	$628,485
Rubber, powdered and rubber or gutta percha scrap	241,173	18,822	3,504,327	199,849
Balata	595	479	1,790	1,505
Rubber substitutes	62,200	4,768	449,152	58,208
Totals	1,065,468	$182,115	8,998,564	$888,047
PARTLY MANUFACTURED				
Hard rubber sheets and rods.	56,900	$54,646	192,689	$135,230
Hard rubber tubes	.....	123	.....	786
Rubber thread not covered..	8,622	10,753	108,169	114,617
Totals	65,522	$65,522	300,858	$250,633
MANUFACTURED				
Belting	.....	$9,553	.....	$157,225
Hose	.....	10,057	.....	118,918
Packing	.....	5,420	.....	30,339
Boots and shoes.....*pairs*	9,518	13,716	32,678	55,731
Clothing, including waterproofed	.....	9,140	.....	121,225
Gloves	.....	1,184	.....	10,451
Hot water bottles	.....	1,292	.....	10,005
Tires, solid.....*number*	186	10,042	813	30,186
Tires, pneumatic.....*number*	993	7,462	22,181	354,370
Inner tubes.....*number*	108	555	13,093	42,472
Elastic, round or flat	.....	15,549	.....	147,647
Mats and matting	.....	1,412	.....	14,795
Cement	.....	4,492	.....	35,154
Golf balls.....*dozen*	204	478	25,943	108,707
Heels, rubber.....*pairs*	6,335	339	96,601	7,770
Other rubber manufactures..	.....	106,891	.....	1,003,312
Totals	.....	$197,582	.....	$2,248,307
Totals, rubber imports.	.....	$3,428,908	.....	$20,720,357

Exports of Domestic and Foreign Rubber Goods

	November, 1925		Eight Months Ended November, 1925	
UNMANUFACTURED	Produce of Canada Value	Re-exports of Foreign Goods Value	Produce of Canada Value	Re-exports of Foreign Goods Value
Crude and waste rubber....	$40,374	.....	$236,710	.....
Totals	$40,374	.....	$236,710	.....
MANUFACTURED				
Belting	$64,292	.....	$378,397	.....
Canvas shoes with rubber soles	144,489	.....	1,694,343	.....
Boots and shoes	164,795	.....	1,348,051	.....
Clothing, including waterproofed	3,703	.....	33,497	.....
Hose	17,935	.....	153,093	.....
Tires, casings	992,880	.....	6,576,889	.....
Inner tubes	159,828	.....	1,143,647	.....
Solid	27,737	.....	156,067	.....
Other rubber manufactures..	53,906	$24,321	281,935	$102,670
Totals	$1,629,565	$24,321	$11,765,919	$102,670
Totals, rubber exports.	$1,669,939	$24,321	$12,002,629	$102,670

CONTINUED INCREASE IN RUBBER FOOTWEAR EXPORTS

The number of pairs of rubber boots and shoes exported from the United States, Canada, and the United Kingdom shows a steady increase for the years 1922, 1923, 1924, and the first eleven months of 1925. According to statistics prepared by the Department of Commerce, the total exports of these goods by the countries mentioned numbered in 1922, 6,978,915 pairs; in 1923, 9,577,350 pairs; 1924, 12,450,740 pairs; and in the first eleven months of 1925, 13,339,884 pairs. Canada represented the largest advance in shipments, due in great measure to contributions from American branch factories of that country. United States exports of rubber boots reached a total for the first eleven months of 1925 of 817,556 pairs; rubber shoes, 1,037,241 pairs. Corresponding figures for the entire year 1922 were: 241,919 pairs of rubber boots and 863,559 pairs of rubber shoes.

INTERCONTINENTAL RUBBER REORGANIZED

Those having shares of the old holding company known as the Intercontinental Rubber Company of New Jersey are exchanging these shares for those of the newly organized Intercontinental Rubber Company of Delaware. By means of corporate changes the Delaware concern expects to have ample funds for development in its plans for establishing in the United States an all-American marketing and producing rubber company, with the purpose of utilizing rubber from the guayule shrub.

The company which has been in active operation since 1906 lists the following as directors: George F. Carnahan, president; John R. Morron, Elton Parks, William C. Potter, Felix T. Rosen, Charles H. Sabin and H. H. Vreeland.

INTERNATIONAL RUBBER EXHIBITION PREPARES PLANS

Extensive preparations are being made for the Seventh International Exhibition of Rubber, Other Tropical Products, and Allied Industries, to be held January 21 to February 6, 1927, at the Grand Palais, Paris, France. Among the various noteworthy exhibits will be those arranged by French colonial interests, and also by the Associations of French Rubber and Cable Manufacturers. The latter organization is planning a special program of attractions connected with the rubber industry, and has secured a space for its displays of more than 15,000 square feet.

WORLD MOTOR VEHICLE REGISTRATION

According to statistics prepared by the Automotive Division of the Department of Commerce, the total world registration on January 1, 1925, of passenger cars, buses, trucks, and motorcycles totaled 22,700,344 vehicles, as against an estimated total for January 1, 1926, of 25,973,928 vehicles. The total number of passenger cars included in these 1925 figures reaches 18,578,750, and for 1926, 20,799,151. Passenger cars registered for 1926 in the United States total 17,317,357; the United Kingdom, 660,734; Canada, 644,725; France, 450,000; Australia, 243,055; Germany, 215,150; and Argentina, 165,000.

RUBBER FOOTWEAR EXPORTS FROM CONTINENTAL EUROPE

Exports of rubber footwear from France, Germany, Austria, and Sweden aggregated 7,252,062 kilos in 1922, 6,774,389 kilos in 1923, and 7,880,169 kilos in 1924, while it is believed that the total shipments for 1925 will outdistance the 1924 figures. In these statistics, as prepared by the Department of Commerce, France shows the greatest advances, followed by Germany, Sweden's trade also shows an increase, but Austrian statistics for 1925 have not yet been published.

NOVEMBER RUBBER GOODS EXPORTS LESS THAN FOR OCTOBER

The total value of American exports of rubber goods declined to $4,294,257 for November, as compared with $4,956,309 in October, and $5,065,262 in September. The November figures are, however, higher than for any month during 1924 and nearly up to the average for the first ten months of 1925. The falling off in November values was caused by smaller shipments of automobile casings, rubber footwear, and mechanical rubber goods. Slight gains noted in the exports of rubber toys, balls, and balloons and in rubber sundries were not of sufficient importance to offset the decline in the other items. November exports of rubber thread, at prices slightly higher, advanced to 157,777 pounds, as against 150,224 pounds in October. The price per pound of scrap rubber continued its general upward trend, reaching $0.0792 in November, the highest price for the year.—*Commerce Reports.*

INDIA RUBBER WORLD
FOUNDED 1889
CAOUTCHOUC
GUTTA-PERCHA
Reg U.S. Pat. Off.
Reg United Kingdom.

Vol. 73 March 1, 1926 No. 6

TABLE OF CONTENTS

Our Publicity Page

Advertising in the Trade Press

ADEQUATE distribution is vital to selling any product of general utility. Such distribution is secured by inducing local dealers to stock your products through publicity.

How to Get the Dealers to Stock

The most natural way to accomplish this object is to approach the dealers through their trade press. Telling the news of your goods and services is certain to attract the interest and inquiries of progressive dealers and customers to the mutual advantage of all concerned.

The Trade Press Most Effective

The trade press not only has national and international circulation but it occupies a unique position among periodicals because it is founded on the need of manufacturers, jobbers and dealers for channels for the interchange of ideas on trade and its development along progressive lines. Hence the trade and technical press stresses service rather than entertainment as its basic justification and law.

Economical and Quick Service

Nation-wide dealer acquaintance and cultivation of good will of equal scope is secured most directly through the trade press and at a mere fraction of the cost of sufficient national advertising in popular magazines to induce dealers generally to stock goods. In other words the manufacturer should first provide adequate dealer connections before undertaking consumer campaigns if he would avoid enormous waste. This truth is recognized in the dealer's service departments of many large popular magazines and indicates that such periodicals are doing at large expense, work that can be done by the trade press for advertisers much more thoroughly and cheaply either before or in connection with the consumer campaign.

Trade Press Commands Confidence

Business men rely on their trade papers for business news, market conditions, price movements, style forecasts, new methods, technical information and sources of supply. This means that they scan critically every issue and find the advertising as valuable to them as the text. Their trade papers tell them what and where to buy and they are directly influenced by this information in their selection of stocks. Progressive men freely acknowledge the importance of the trade paper as a factor in their success.

A Stimulating Force

The trade press is thus a vital factor for good in business relations. In fact not even consumer demand is so powerful with the dealer since the conscientious dealer stands squarely between manufacturer and consumer, guarding the interests of all. He is alert for action because he realizes that the easiest way to advance his own interests is to sell only the goods of responsible concerns found advertising in reliable trade papers. Therefore it is logical that the manufacturer desirous of prompt and economical distribution should approach dealers through their trade papers and keep his products before them by the same medium.

The Rubber Goods Dealers' Paper

The India Rubber World is a dealer's as well as a manufacturer's paper. Everywhere, at home and abroad, it is the chief medium between all concerned in the manufacture and sale of rubber products. One of its most important functions is that of placing the messages of manufacturers before the dealers, informing them of what is newest and best in rubber goods and affording direct contact between producer and seller. The long record of success of *The India Rubber World* proves its efficiency in getting good firms acquainted.

Introduces the Salesman

Sincerity, fairness and advocacy of business integrity have been the policies of this paper for nearly two score years and its readers are fully convinced that they can rely on its advertisers for satisfaction and fair dealing. Your advertisement in *The India Rubber World* is an advance introduction that opens the dealer's door to the salesman on his arrival. Your sales story reaches everybody in the rubber trade in a medium inspiring confidence and respect. Under these circumstances satisfactory results are certain to be prompt, gratifying and permanent.